THE BUILDER

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WITH WHICH IS INCORPORATED "THE BRITISH ARCHITECT."

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HOUSING AND PRIVATE ENTERPRISE.

THE Prime Minister in his Glasgow speech foreshadowed the continuation of the Government housing scheme in some modified form. It is to be undertaken solely to provide a palliative for unemployment; and everyone must admit that work of any kind is preferable to doles, which are essentially demoralising to the recipient as well as wasteful of public money. The Prime Minister remarked that if they tried to carry on housing half by State-aid and half by private enterprise they would probably fail in both, and it is regrettable that neither State-aid nor private enterprise commands the approval of both the parties most interested in housing—the housing reformer and the house builder. While awaiting a more definite announcement of policy on the part of the Government, we propose, therefore, to examine the causes of the unfortunate differences and misunderstandings which exist between the reformer and the builder, as represented by the National Housing and Town-Planning Council and the National Federation of House Builders. We can make no satisfactory progress while the reformer considers the builder a commercially-minded materialist, or while the builder looks upon the other as a tiresome crank. Divisions of this kind are disastrous. The article which appeared in our last issue by the Secretary of the National Federation of House Builders, is a frank expression of opinion, and healthy criticism such as we here find is precisely what is required to clear the air. Let us now examine the Federation's attitude and see why it is that such misunderstandings as we have mentioned should exist.

Mr. McKellen (the Secretary of the Federation) finds himself at a loss to explain why the National Housing and Town-Planning Council appears to distrust private enterprise and to lean towards houses provided by the State and local authorities, and he remarks that, "with all possible good will—and this is the season for good will—one is drawn to the conclusion that the policy of the Council is dictated by a strong partisan bias." Now, we do not pretend to know the mind of the National Housing and Town-Planning Council, but we do suggest that there must be more behind its dislike of private enterprise than a capricious and inexplicable partisan bias. There must exist something in the nature of a "complex," the removal of which by Mr. McKellen and his organisation would, at the same time, eradicate the hostility shown by the Council to private enterprise generally, and to the house builder in particular. The Council has its own ideals as to housing which it presumably intends to follow, using only the instruments that promise to forward those ideals.

Let us begin, then, by a statement of fact: that the Council is of opinion that pre-1910 housing was proceeding along the wrong lines; that it demands less crowding together of houses, more open spaces, less monotony, and more real architecture in house design. Would not people holding this point of view naturally welcome a State-aided scheme that promised to introduce these new factors? The Council's attitude, and that of all other housing reformers, towards the house builder and State housing is thus easily explained without any of them necessarily possessing the slightest leaning towards Socialism; they naturally approve of any measure, whether "socialistic" or otherwise, which appears to be requisite to effect an end they have in view. We can also state definitely that the Council believes that Government houses have proved to be an advance in the directions outlined above. Here, therefore, we have the Council holding that pre-1910 housing was of an undesirable type, and that the State houses show a decided improvement. This Council finds itself confronted by the National Federation of House Builders, who claim that "private enterprise provided practically all the houses for the working classes in the past," adding that there is no proposal by the National Housing and Town-Planning Council to revive it. Much as we may desire to promote private enterprise, is this something to cause astonishment, when we remember the Council's opinion on working-class houses in the past? Again, bearing in mind the Council's opinion of the Government schemes, does it allay any fears the Council may have for the safety of the new standard when Mr. McKellen proclaims that "the recent housing effort was a disastrous and expensive experiment in Socialism"? The Council sees in the Government schemes an expensive but invaluable beacon for future guidance; Mr. McKellen sees only a disastrous experiment. There is thus no mystery as to why the Council is suspicious of private enterprise, nor is there any reason to infer partisan bias; it is, we believe, simply and solely because the National Council and others who think like it are afraid that private enterprise will not keep up to the standard of housing set in the Government schemes.

The only remedy we can suggest to heal this unfortunate breach is for the house builder to show that he does appreciate the advance in standard that the Government schemes have initiated, and that he is prepared to continue on the same lines; he may at the time time abuse the Government's financial methods as much as he likes, this having nothing to do with the main issue. Mr. McKellen more than once in his article rightly insists on the necessity for building good houses; the trouble is that he does not define, even in the vaguest manner, what he means by a "good" house, and the National Council and others are afraid that the house builders' views may not coincide with the new ideal. We ourselves may feel sure that the house builder will not go back to the old style, but we are also confident that the main stumbling-block in the way of a complete revival of old-time reliance on private enterprise is the fear that he may do so. We earnestly hope for his success, as he is by far the most competent person to build, but he must remember that designing and building are two entirely different things.

The National Federation of House Builders, in its proposals for a National housing programme, asks for "the grant of a cash subsidy to the owner of all new houses of an approved type for the working classes," and that "the assistance should be granted equally to municipalities and to private enterprise building houses of a good type." We must here note that the Federation makes no mention of the co-operation of architects, nor is the possibility of such co-operation even mentioned in Mr. McKellen's article; and since the reformer, rightly or wrongly, regards the advance in housing shown in the Government schemes as being mainly due to the architect's influence, this omission, until it is remedied or explained, must weigh in the consideration of the matter. We feel that a frank and considered expression of opinion by house builders on the above points would help them enormously to establish that confidence the lack of which is proving such a severe handicap.

NOTES.

The Architect as Conductor.

MR. LAURENCE A. TURNER'S paper, read on Monday night at the Architectural Association, on "The Workshop," was full of hints of the kind that only the expert craftsman can give. At the same time the paper brought out once again the ever-increasing difficulty experienced by the architect, who is expected not only to be an artist, lawyer, draughtsman, chemist, geologist, physicist, and engineer, but also an expert in timber, stone, hot water systems, ventilation, gas fitting, and acoustics, not to mention that he must show efficiency as an antiquarian, electrician, historian, sociologist, furniture appraiser, and financier. We have only touched upon a few of the subjects in which he is called upon to be at home and at his ease, but to be an expert even in the few we have mentioned is to be a remarkable creature. Mr. Spooner, in proposing the vote of thanks, compared the architect to the conductor of an orchestra who must be intimately acquainted with the timbre, range, and capacity of each instrument, even though he may not be able to play the half, or any, of them.

Appreciation.

WHILE we can all welcome the increased attention and interest bestowed on work of the past, such as mediæval sculpture and painting, for instance, and the desire to secure its permanence and freedom from injury, we should not, in our interest for these, ignore the claims which our own time lays upon us. Though we should not let the present predominate over the past, neither should we forget what is due to the present and the future, and in this matter of art we are inclined to do so, forsaking the harder task for the easier one. In old age we naturally look backwards rather than forwards, as our grasp of the present lessens, and we dwell more on those things in which our associations are then most bound up. But it would not be a healthy national symptom if, because of the uncertainties and disillusion attending us just now, we became indifferent to the claims of our own time. Appreciation of the past and of its work makes no such demand on our independence of judgment, because it is fortified by a general acceptance which makes the task easier for us—makes little claim upon us. In such circumstances there is no such courage and independence attaching to our judgment as when it directs its appreciation to good work now, and for one who has the courage of his opinions in the latter case, there are a thousand to interest themselves in works of antiquity. Though it is natural that the sanction with which time invests a work of art should impose its claims upon us, that man who encourages and furthers the good work of his own time does a harder thing, and one which asks a higher intelligence, more insight and courage, than the former. We think it desirable to call attention to this aspect of the matter lest we become flunkeys of the dead centuries, lest we forget the harder task for the easier one.

Joa's Bath. By MR. W. M. KEESEY.
From the Phantasy Exhibition at the A.A. (*See p.* 80.)

Builder and Architect.

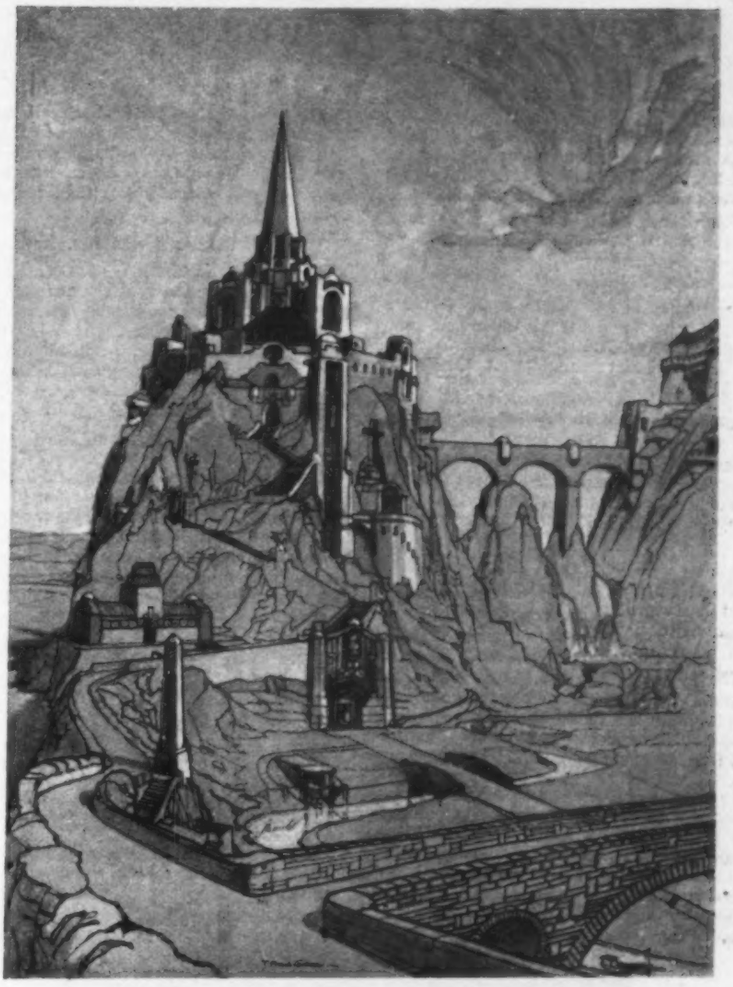
PROFESSOR PRIOR'S letter to the *Morning Post* in reply to one by Mr. Ernest Betham (Housing and Development Society) expresses some original and unconventional views on the subject of housing. He tells us that "neither architect nor contractor is necessary for housing," and adds: "when the municipality, plus architect and contractor, were 'housing' at over £1,000 a house, the 'will to work,' self and two friends, built a larger house at two-thirds the money," and he is not prepared to admit that this latter, built, as were the mediæval cathedrals, without architect or contractor, was not architecture in its evident building economy. We wish that the writer would amplify his statement with more particulars, for there is a challenge contained in it. Have we organised ourselves too much? A proverb by William Blake tells us to "damn braces, bless relaxes," which may yield a clue and justify us in a reasonable interpretation of his statement. It was the great painter, G. F. Watts, who, we believe, on one occasion stated that the best work of his time was done by amateurs. No doubt Professor Prior was at some advantage in his undertaking, for is he not himself a distinguished architect?

Beauty and Preservation.

IT is stated in an article appearing in *The Times* on the subject of the preservation of ancient buildings that "beauty has no place in the test," and that the consideration of their preservation is not regarded from this point of view, which we beg leave to doubt. "Ideas of beauty," it is said, "are ever changing." "Each decade sees a different view of beauty." But is not this a rather superficial way of regarding the matter? There may, no doubt, exist an historical interest in a building apart from its beauty of character, and this may be a good reason for preserving it, in that it may be associated with some remarkable event or person which gives it value. Otherwise, it is surely the case that the chief desire for preserving ancient build-

ings grows out of some beautiful architectural, or other quality to be found in them. Is it not a little misleading to say that the different view of beauty in succeeding ages directs us to disregard his quality when considering the claims of a building for preservation? The difference is surely one more on the surface than of any intrinsic difference. Beauty never contradicts beauty in any right view of it, and where this quality can be rightly claimed for a building, it relates it, rather than differentiates it from other buildings. We desire to preserve Whitgift's Hospital for its beauty primarily, and probably should not do so if it was ugly—this is what inspires the resistance to its destruction for utilitarian objects, and whether it is an old City court or church, it is some claim of beauty that primarily governs our desire for its preservation, because in that desire there is contained something that appeals to what is best in us: that the building enshrines something of our own feelings sustaining what is best in our own life.

Colour in Building. A CORRESPONDENT, referring to a recent letter in *The Times*, in which the writer speaks of the prevailing use of white stone in the new buildings being erected in the centre of London, and the sameness resulting from it, suggests the use of more colour. We confess to feeling that in many of these buildings their size is greater than their significance. One of the most noticeable features in such new buildings—as, for instance, in that very large white stone building completed but recently in the Kingsway—is the absence of light and shade. It is all so much on the same perpendicular plane, and such features as there are are too insignificant in effect to make much difference. The façade remains unbroken, and is, as it were, "clapped" on to us all at once. The eye wanders through no vistas of haunting shadow, no cornice projects its shadow above us. So far as effects of light and shade are concerned, nothing much projects and nothing recedes, and the features are little more than scratches on the vast plane of its exterior. Our contemporary also drew attention, in a recent article on the subject of new buildings in London, to the "plain, almost severe, but entirely pleasing design" of these buildings. But we should not confuse severity with mere vacuity, or be pleased with the "simple white stone" as in itself so very satisfactory. In thinking of the romance and colour of a building, the significance of its light and shade is of much importance. In good architecture we are pretty sure to get the effect of colour or its equivalent, and a little too much may be made of this attribute unless we know where we are.



Le Monte de Piété. By MR. T. FRANK GREEN.
From the Phantasy Exhibition at the Architectural Association. (*See p.* 80.)

Whitgift Hospital, Croydon. EVERY effort to destroy their one valuable relic of antiquity appears to be on foot by the Croydon Town Council. Defeated by the vote of a town meeting in their proposal to bring in a Bill to destroy the Whitgift Hospital, they now propose to take a poll of the inhabitants. We are always told the heart of the people is sound, so now we shall see.

The Mall. IT is the incredible which happens, says the enthusiast and dreamer. Perhaps it is, for the closing in of the fine opening from the Mall to Trafalgar-square has already begun, and in the face of such an extraordinary barrier to London development we all appear powerless.

The Cost of Building Competitions. FIGURES published in our issue of January 5 showed a very substantial fall in the prices of building materials during the past twelve months. The cost of building a house is still higher than was the case pre-war, but the cost relative to that of renting similar accommodation is not nearly so disproportionate as it was a year ago. Tenants and lessees who have been made to feel the discomfort of old-fashioned houses left without adequate repair are beginning to venture upon the construction of houses of their own, realising that the high rents they have been charged recently have been equivalent to a very considerable capital outlay for which they have obtained but a meagre and inadequate return. *The Builder* "Cost of Building Competitions" are being promoted with the object of clearing away some of the difficulties in the path and in an attempt to discover whether it is possible to produce a really architectural house design that is at the same time economical in first cost of construction and of maintenance as well as in respect to the housewife's labour in upkeep. Intending competitors who have not yet made application for the Conditions should fill in the coupon on page lxxviii. After the completion of Competition No. 1 it is intended to hold a second Competition, open to builders, to estimate for houses based upon the winning designs.

GENERAL NEWS.

Professional Announcements.

Captain C. W. B. Bolton, F.S.Arc. (late R.E.), recently demobilised, and formerly practicing in London and Jersey, has resumed practice at No. 14, Library-place, Jersey. He will be glad to receive priced catalogues, samples, &c.

The new business address of Mr. Frank Windsor, F.R.I.B.A., is 56, High-street, Croydon (Scarbrook-chambers).

Correction.

In our leading article last week the sentence beginning, "We have become dislodged from the old grand conviction that there was no higher law," should read, "that there was 'any' higher law," &c.

Resignation of North Riding Architect.

Mr. W. H. Brierley, F.R.I.B.A., F.S.I., architect, York, has tendered his resignation as architect to the North Riding County Council. He has held the post for twenty-one years.

Victoria and Albert Museum.

The National Art-Collections' Fund has purchased and presented to the Victoria and Albert Museum a complete set of alabaster figures in relief of the Twelve Apostles, English work of the fifteenth century.

Vacancy for Architect.

The Secretary of the R.I.B.A. has received particulars of a vacancy for a chief architectural draughtsman in the Public Works Department, Jerusalem. Further particulars may be obtained from the Secretary, R.I.B.A.

War Memorial, Slateford.

A war memorial was unveiled in Redhall new public park, Slateford, recently, by Mr. R. N Dundas, W.S. The memorial consists of a pillar and cross of pink sandstone, and was designed and executed by Mr. John S. Rhind.

Celtic Art and Highland Crafts.

Under the auspices of the Highland Association, an exhibition of Celtic Art and Highland Crafts will be held in Edinburgh and Glasgow during next May. Competitions will be held in Celtic architectural decoration, metal, and woodwork, &c.

Grosvenor Galleries.

The Winter Exhibition at the Grosvenor Galleries will be closed after Saturday, January 13, and early in February there will be opened the following exhibitions:—Landscapes, by Sir John Lavery, R.A.; Still Life and other pictures, by E. Q. Henriques; London and other landscapes, by H. J. Gunn; and Portrait Drawings and Landscapes, by William Rothenstein.

Whitgift Hospital.

The proposed promotion by Croydon Borough Council of a Bill in Parliament for the demolition of the Whitgift Hospital for street widening purposes, was defeated by a large majority at a town's meeting on Tuesday. The Council are to hold a special meeting on Monday to decide whether they shall take a poll of the borough.

Sir Christopher Wren Anniversary.

American architects are preparing to observe next February the 200th anniversary of the death of Sir Christopher Wren. The American observance will be consistent with the celebration in England, where the Royal Institute of British Architects has set aside the entire week beginning February 26, 1923, as commemoration week.

Empire Exhibition.

In view of the large demand for space at the British Empire Exhibition, the extension of the machinery hall by the addition of 70,000 sq. ft. of space has been recommended, in order to house the entire sea and land transport group of exhibits in the extension.

The Allied Societies and the R.I.B.A. "Journal"

Arrangements have been made for the supply of the R.I.B.A. *Journal* (post free) to members of the Allied Societies who are not members of the R.I.B.A. at a specially reduced subscription of 12s. a year. Those who wish to take advantage of this arrangement are requested to send their names to the Secretary of the R.I.B.A., No. 9, Conduit-street, W. 1.

R.I.B.A. Elections.

FELLOWS.

At a business meeting of the R.I.B.A., held on Monday at No. 9, Conduit-street, the following new members were elected:—

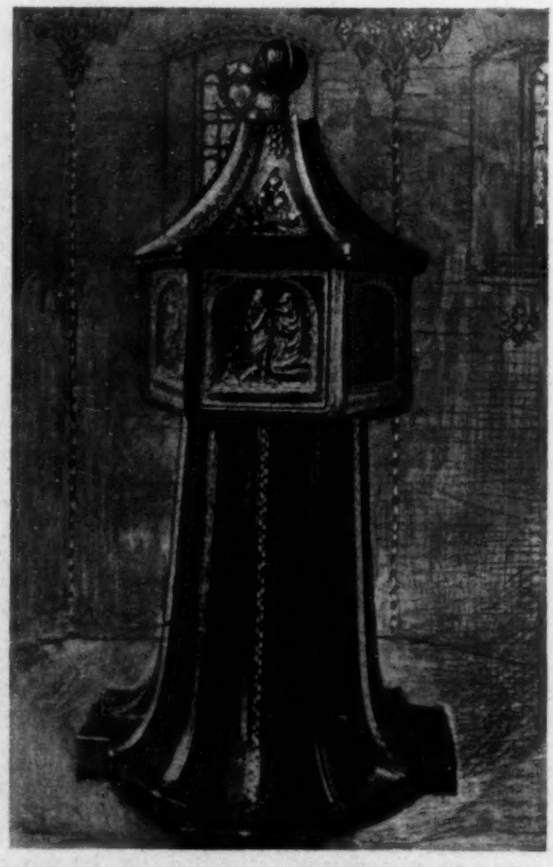
W. M. Epps, London.	J. L. Fouracre, Plymouth.
D. L. Solomon, ,,	T. Walker, Trowbridge.
C. W. W. Thompson, Rochester.	

ASSOCIATES.

W. A. Devereux, London.	A. S. Dunn, Bombay.
G. B. Scotland, Airdrie.	I. A. Moodie, Aberdeen.

Sunderland War Memorial.

The unveiling of Sunderland's war memorial took place recently. The memorial, which stands in Burdon-road, consists of a column and pedestal, in the Doric style, of Cornish grey granite, standing on a platform 4 ft. in height and 31 ft. wide, approached by four flights of steps, also in granite. The platform is surrounded by grass slopes, on which wreaths may be laid. The column, which weighs 85 tons, supports a winged bronze figure of Victory measuring 12 ft. 4 in. from lowest toe to tip of highest wing, and weighing 1½ tons, the bronze being treated with an antique Florentine finish. The figure stands on a granite ball, and is clad in flowing classical drapery. The total height of the monument is 54 ft. Mr. Richard A. Ray, A.R.C.A., of the Sunderland School of Art, was the sculptor and architect.



Gesso font (gilded and coloured) in Tilbury Church, Essex.
By MR. REGINALD HALLWARD.

COMPETITION NEWS.

The Cost of Building.

The Builder is promoting two competitions for architects to design and for builders to estimate for the erection of dwelling houses containing three and four bedrooms respectively, such as would have been let pre-war at rentals of £19 10s. and £36 per annum. A premium of £75 will be paid to the architect submitting the best design for a house in each class, and also to the builder submitting the best but not necessarily the lowest tender for a house in each class. Sending-in day March 1. Further particulars are given on p. lxxvii.

Dewsbury War Memorial.

FOR DEWSBURY WAR MEMORIAL COMMITTEE.—Designs for a war memorial in Crow Nest Park, Dewsbury. Sending-in day, March 31, 1923. (See our issue for Dec. 1.)

Colwyn Bay Town Hall.

The design placed first in this competition by Messrs. J. M. Porter & Co., of Colwyn Bay, is given on p. 87.

International Labour Office, Geneva.

The President of the Royal Institute of British Architects has nominated Mr. Edward P. Warren, F.S.A., F.R.I.B.A., as the British member of the jury in connection with this competition.

Other Competitions.

Other competitions still open include the following (the dates given are, first the sending-in date, and second the issue of *The Builder* in which full particulars were given): Port Said War Memorial (March 31, 1923, Sept. 29); American Hospital (Feb. 1, 1923, Nov. 24).

ON Monday evening last a general meeting of the Architectural Association was held at No. 35, Bedford-square, W.C., under the chairmanship of Mr. Stanley Hamp, F.R.I.B.A. (President).

New Members.

The PRESIDENT announced eight nominations for membership, and the following new members were elected:—

Mr. F. C. Holland.	Mr. W. McIntyre Raeburn.
Mr. W. Maitland.	Mr. L. F. Baker.
Mr. A. W. White.	Mr. C. J. Keeling.
Mr. G. L. M. Jenkins.	Mr. R. B. Saunders.
Mr. P. G. Bentham.	Miss E. L. Caldicote.
Mr. L. M. Tye.	Mr. R. W. Atkey.
Mr. E. Wilensky.	Mr. A. F. Ure.

The Endowment Fund.

The PRESIDENT also announced the receipt of a donation of £105 towards the Endowment Fund from Messrs. Higgs & Hill, Ltd.

ARCHITECTS AND THE CRAFTS.

MR. LAURENCE TURNER then gave a lecture entitled "The Workshop." In his opening remarks he said in his opinion the best preliminary training for an architect was a term of two years with a good country builder so that he might get an all-round knowledge of how to build; he believed in a man becoming a good builder first and learning how to be a good architect afterwards. Unless an architect had a thorough knowledge of the materials in which he was working and the right form of construction applicable to those materials, how could he expect to get a right sense of the fitness of design?

Dealing with the shops in which architectural work was carried out, he took first the mason's shop. He said unless an architect had some experience of stone, how could he judge what was good and what was bad; or what sort of sections he should draw for the mason to work in a particular stone or marble? With figured marble it was waste of good labour and material to work anything but the simplest of mouldings. Many marbles were so hard and faulty that the only possible way in which mouldings could be produced in them was by wearing the marble away by rubbing and the use of the grub saw. Beer stone and Portland stone required different sections from Bramley Fall or the Chellynch bed of Doulting stone. The natural bed of some stones was very difficult to see; even Portland stone, which was so dense and even that the bed was hardly discernible, had a right and a wrong way if the stone had to bear any great weight. Sometimes a piece of Portland stone would be condemned and replaced by another which would not have a tenth of the lasting quality of the condemned piece, for it was not the clean white stone which had the longest life—some Portland stone would not withstand the London atmosphere for five years.

Did architects know how to joint masonry, and how it should be fixed? If a column or obelisk were being erected for a war memorial how would they make the joints, arrange the dowels, and fix the shaft? Many such memorials had been blown down. The most important thing was to use good long dowels, and to fix the dowels into the upper stones before they were bedded into the lower. Stump dowels were quite inadequate, and were generally made the wrong way. Bronze, copper or slate dowels should be used, but unless they were well set in the upper stone first they would never be safe from the catastrophe of being blown down.

In the case of small memorials, it made a considerable difference to the general effect if the right sort of texture were worked on the surface of the stone or marble. It was not necessary to leave rough tool marks on the face of masonry, for roughness only attracted dirt, and soon became unsightly. If it were desired to have a modelled surface care should be taken that the stone was not first of all worked to a dead level, for that only made matters worse. The stone must be worked to an even face by point and chisel, and finished with the chisel; it might be glass-papered to obliterate the batt of the chisel, but if so the paper should be placed on the hand or on a soft pad and not on a hard block. In many instances such careful treatment would be waste of time, but if the work were small and refinement of finish were required it just made the difference of giving it an interest which could be obtained in no other way. Accidental effects could also be obtained by knowledge of the material; for instance, some oolitic stones when sawn had a delightful accidental ripple left from the saw—that was produced by the vibration of the saw, and the effect on a large ashlar wall was to give it additional interest.

Alabaster was a difficult material to use satisfactorily. Sometimes good white alabaster looked black because it was so transparent that one could look into the depths of the block, and in order to make it white—or rather opaque—the custom was to boil it. That required great care because if it were overboiled the alabaster was turned into plaster-of-Paris and would disintegrate in a very short time.

With regard to different stones, Beer stone was most useful for interior decoration, but carving on it soon looked dead. Blue Hornton from Banbury was a stone which had very much come into use for war memorials. Clunch and Totternhoe, from Dunstable, were much alike, but the latter, although as soft as Clunch, had to be cut with a toothless saw. Ancaster was a very good stone for carving, but probably dangerous to use out-of-doors, in spite of the fact that it had been used on Magdalen College, Oxford, and appeared to be sound at present. Bramley Fall was a most useful stone for carved monuments which were coarse or big in design.

His feeling about carving was that a coarse-grained stone would always give the most satisfactory results. Carvers hated it because it was difficult to carve, but that was the reason it looked well. A stone that was easily cut required great delicacy in modelling the broad surfaces of the ornament, otherwise it looked smug and cheap.

In connection with the plasterer's work, he disliked most of the modern materials, which were too hard and brittle, and the rough plaster on which they formed the finishing coat was not strong enough to hold them; they were very conducive to sound, and cracked badly. In ordinary lime plastering on laths it should be seen that the laths were not nailed too close together (as they nearly always were nowadays), so that a good hook of plaster on the back of the wall was produced by the trowel always being worked one way. In fibrous-plaster casts the wood, canvas, and plaster were too often starved, with the result that the ceiling soon showed every lath and became dirty in a few months because the air got through it. With regard to drawings for a decorative ceiling, he thought it best to give full-size sections of cornices, etc., but only to indicate on a scale drawing the plan of the enrichments which were to be modelled full size. His method of hiding the joints in a plain surface of fibrous-plaster work was to leave a

Gesso relief panel (gilded and coloured), one of the series round the font in Tilbury Church, Essex. [By REGINALD HALLWARD.]

1½-in. rebate on the edge of each cast that had to butt against the other, and then stop the joint with canvas and plaster; the stopping should be left on for a day or two and then cleaned off. The difficulty was that plaster swelled as it set, and consequently a ridge was visible unless a wide joint was made and time given for the plaster to finish swelling. In making Portland cement casts, the secret for making them stand against frost was to see that the cement was properly slaked; when the cast had set it should be taken out of the mould and put under water for a week or a fortnight, and, provided the cement was good and the sand clear, a casting would be made which would stand any weather.

He thought compo was a material which might be much more used than at present for decoration. If it were carefully made and applied it would last as long as any carving, and it formed the best of surfaces on which to paint or gild.

Models for inscriptions in raised letters were best carved in plaster. His method was to draw the letters and then place the drawing face downwards on the slab of plaster and gently rub it. That transferred the pencil drawing to the plaster, and the letters were carved inside-out, forming a mould; when a cast was taken off that the letters stood out in relief.

In connection with woodwork, he said an architect should know more than a smattering about the different qualities and characteristics of wood. All woods did not crack in the same way; neither did the same wood always crack alike. Sequoia, for instance, did not crack with the grain, but in a diagonal direction, and therefore he did not consider it a good wood to use for floor boards. He believed the law which was made many years ago proclaiming that oaks might only be felled in the spring, when the trunk was so full of sap as to make the tree burst and put forth buds, was still in existence. Oak never recovered properly when cut down at such a time; it took years of washing in a stream to get the sap water out of it, whereas if it were cut when the sap was quite down the wood might be used after twelve months' seasoning.

All wood should be quartered to exhibit the beauty of the grain, although there were exceptions in some of the hard woods, such as figured ebonies. Most hard woods which came from hot countries were particularly bad with regard to shrinkage, which could be attributed to the fact that they were evergreens and consequently the sap was never down. For plain surfaces all such woods should be veneered, and the wood they are veneered on to should be veneered on both sides, so that there would be equal tension on both sides. Boarding should never be jointed with dowels unless to butt one piece of end grain to another, for the dowels, being the reverse way of the grain, would not shrink in the same manner as the board.

Discussion.

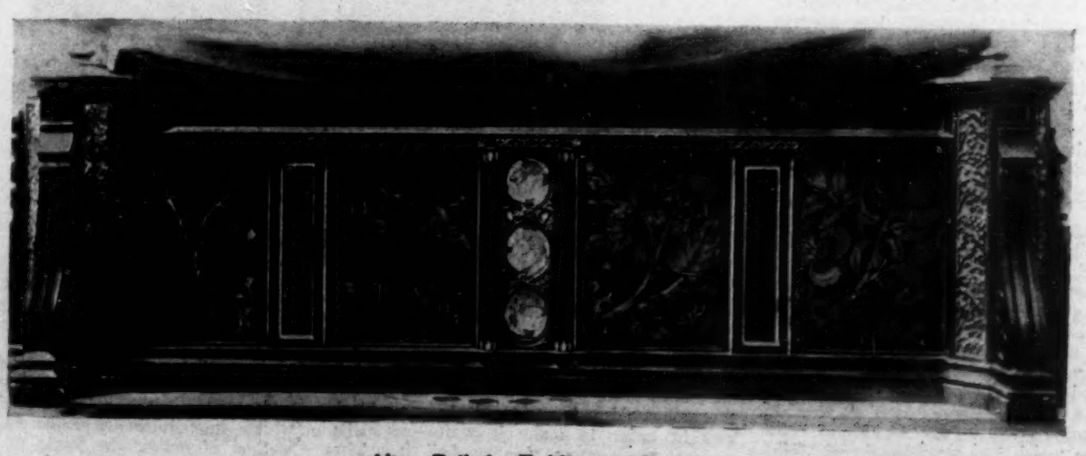
MR. CHARLES SPOONER, in moving a vote of thanks to the lecturer, said to his mind the architect's position nowadays was a bit out of scale. He was expected to be a specialist in many different sciences and crafts, including engineering, concrete, stone, timber, and everything else connected with building, and not only was he expected to be a specialist in materials themselves, but also in the right way of using them. Such a position was simply impossible, and he could not help thinking that architects had got to think out a much better scheme of working than that in operation at present. The subject was of great importance, and an endeavour should be made to define the architect's position more clearly than it was defined at present. The architect could not possibly be a specialist in everything. It seemed to him that the architect should be more in the position of the conductor of an orchestra. The architect should be the conductor of an orchestra of craftsmen; he could not be a craftsman in all the crafts but he must have a ready sympathy with all the crafts working with him. He thought it almost essential to fine architecture that architects should have a good knowledge of a craft, and he believed they suffered a good deal from the lack of it. First-hand personal experience of materials and the use of tools and the way a material behaved under the hand of the worker were things which no amount of looking or talking would teach, and he would like to see every architect spend some time in learning and practising a craft. Most modern buildings were extraordinarily dead in texture. The way the stone was worked had taken all the life and interest out of it, and it took fifty years of Nature's workmanship to overcome man's mistakes in using the material. A new building ought not to be a hard, unsympathetic, mechanical-looking thing—there was no need for it to be so. If architects had a knowledge of the mason's craft it would not be difficult to find ways of working the stone to get a more pleasant and interesting effect.

MR. T. S. TAIT, seconding the vote of thanks, said architects realised the value of having craftsmen around them, and should get into touch with them. The young sculptor or painter might become famous by working in his garret and executing his own work, but the architect must rely on the craftsman for the execution of his work.

The LECTURER said he thought a great deal too much had been said about smoke destroying Portland stone in London. Whenever a shower of rain occurred after a period of dry weather the first water which came off the roof of St. Paul's looked like milk, owing to its containing a certain amount of stone which it had washed away, but where there was a covering of soot nothing washed away. In his opinion the soot protected the stone. He had found that although a great quantity of English oak had been given to the Cathedral much of the woodwork was foreign oak; he supposed the craftsmen of that time preferred to use the easier working foreign oak.

MR. G. H. JENKINS said he did not think alabaster a suitable material to use in London, as it was far too soft. It was very doubtful if such material was worth using, especially as it was generally covered over; it was often used as a cheap substitute for a better thing. If one could build with the stone of a district it was likely that less trouble would arise in building and less decay result than if stone were imported from outside the district. Bath stone, for instance, had a bad reputation at the seaside and not too good a reputation in London, but one had only to go to Bath to realise how fine a stone it was as it had been used in that city. That applied to many stones. In its own districts, such as Kent, chalk was an excellent building material. With regard to plasterwork, many fine ceilings were spoilt by moisture working through in parts where there were no joists and not where the joists occurred. At Chatsworth, for instance, the ceiling of the chapel came down and it was necessary to put it back again without damaging it in any way. All the ceiling joists were of oak and, being small pieces of timber, had apparently not been reckoned as of such importance as the main structural timbers, for it was found that half the ceiling joists were sapwood and the other half hardwood; the result was that the sapwood had entirely disappeared, leaving only dust, while the hardwood was absolutely intact.

The vote of thanks was carried with acclamation, and in reply to points raised in the discussion THE LECTURER said he could not tell them how to eradicate worm from wood; South Kensington had a very good recipe, but it was a rather dangerous one if used by inexperienced people. With regard to sapwood, one of his chief difficulties was to see that the joiners did not use sap wood. He recalled that some years ago he was called upon to make some very large oak panels for a chapel at a convalescent home, but they were required to be of such a width that he could not get pieces of timber sufficiently large without using a small amount of sapwood. This was accepted by the architect, but the whole of the panels had now got worm in them and would probably have to be replaced. All sapwood got worm in it in a very short time; but it was only the sapwood which got worm in it, for no worm could get its teeth into heartwood. All fibrous-plaster work should have at least two coats of paint, but the work usually suffered because the number of coats of paint made a considerable difference in the cost. He thought estimating was intensely unfair nowadays, and thought the better plan was for the client to look at the accounts in connection with a job to see exactly what had been spent and to add a fair profit on the sum. The best work could not be carried out under a system whereby the lowest tender always got the work, for the cheapest price almost invariably meant the cheapest work.



Altar Rails in Teddington Church.
Designed by MR. HENRY SKIPWORTH, with gesso relief and coloured ornament by MR. REGINALD HALLWARD.

CORRESPONDENCE.

The Housing Problem and Unemployment in the Building Trade.

SIR,—In the report of a Ministry of Health Departmental Committee (The Stanley Holmes Report), published in February, 1921, the comparative figures of the number of skilled men employed in the building trade in England and Wales over a period of years are given as follows:—In the year 1901, 720,229; 1911, 646,939; 1914, 423,518; 1920, 324,812. The year 1901 was normal, and it is evident that if the unskilled men employed are added the trade found regular employment for considerably more than a million men. This number had dropped to a little more than half in 1914, and after the war the number is less than half, in spite of the stimulus of the housing scheme.

In the House of Commons, Sir Montague Barlow stated that the number of unemployed in the building trade on October 23 last was 118,739, and that unemployment benefits were paid in four weeks of October alone to the amount of £260,000—this at a time when normal building requirements are not less than in 1901, with the arrears of the war time and previous years to be made up. The plain fact is that a profitable national industry and source of permanent employment, to say nothing of the housing of all classes of the community, has been sacrificed to the pernicious system of taxing building, through owners and occupiers, to provide funds for purely national services which make up the bulk of charges on local rates. The system was fast causing a house shortage before the war, which merely speeded up the inevitable result.

How any sane man can expect either private or public enterprise to be galvanised into building activity, when the mere act of building or improving property incurs an annual liability of an average of 15s. in the £ on the rateable value, is inexplicable. The remedy is so obvious that, even without the sources of information available to the Government after the war, it might have been anticipated that its application would have been one of the first considerations of the Ministry of Reconstruction. Is there any logical objection to relieving local rates of national services altogether? This is the only way to solve the housing question permanently, and the longer the question is put off the more difficult and dangerous it becomes. The taxpayer is also the ratepayer, and as the amount is the same it cannot make any difference in which capacity he pays.

The proposals of the last Government were inadequate to deal with the question, but it is to be hoped that the present Government will find a successful application of the remedy.

The advantages to be gained are apparent, among the most important being the solution of the housing problem on economic lines without doles and experimental schemes, profitable and permanent employment for 500,000 men (the building trade did employ over a million men, and can do so again), and a fresh and important source of revenue from the building and its dependent trades to relieve taxation.

As an immediate remedy, pending the necessary legislation, I would suggest that new houses up to a fixed rateable value should be rate free, the deficiency to be made up to the local authorities by Government grant, the amount to vary according to the class and rental of house from 100 per cent. to nil, the balance being paid by the owner or occupier as at present. This arrangement need not involve any great expense, as the machinery for carrying it out is in existence, and is, apart from being equitable, a comparatively cheap way of stimulating building enterprise and employment.

Rate exemption has been successful in New York and some of our Colonies, but if it is necessary to test the effect of exemption from rates of new buildings, it is only necessary to give powers to any approved local authority to sell some of the land purchased under the "nationalisation of housing" scheme, and which is now useless, to builders rate free for 20 years. The Ministry of Health could devise and supervise the details of the scheme, and the expense to the public would be practically nil. The result would be instructive and probably convincing.

The late housing scheme produced 160,000 houses at an annual clear loss of £10,000,000. A grant to pay rates on 160,000 houses at an average of £15 a year per house would come to £2,400,000 only, less than the amount at present being paid in unemployment doles to the building trade, and would stimulate in place of stultifying enterprise and competition. No expense is incurred until the houses are completed and occupied, and the saving of unemployment doles—at present a dead loss of a quarter of a million sterling per month—would more than compensate.

E. G. HOLTOM, F.R.I.B.A.

Holt, Norfolk.

Gateway leading to Stables at Farming Woods, Hale, near Brigstock, Northants.

What is the Science of Beauty?

SIR,—Your correspondent, Mr. William E. Sanders, is, like the rest of us, troubled in his search after the absolute. How can we hope for a "simple exposition of the fundamentals" (of architecture) "that all can understand," seeing that "our modern recognised architectural exponents" are not merely creatures of prejudice, as are we all, but also are at variance among themselves?

Even so eminent an artist as Professor C. H. Reilly, in a valuable and charming article in a contemporary, on "London Streets," points out "how the little crafty tricks of design which appear so clever to one generation mean nothing to the next." There you have it. What is to-day admired is to-morrow abhorred. Even in more technical matters, such as lighting and material, the same personal preferences and prejudices operate.

Thus, Professor Reilly suggests that "eighteenth century houses" (like Coventry House, Piccadilly) are in better architectural taste than certain "late Victorian" houses, near by, which are "overloaded with windows, leaving insufficient plain wall surface between them." What, then, is the rule as to windows? Is only the external appearance to be considered, or is internal lighting a factor of any importance? Are houses built for the delight of the passer-by or the convenience of those who dwell therein?

Evidently, too, Professor Reilly cannot bear "semi-glazed artificial stone or terra cotta." He hits at it again and again. In a case under notice it appears to have "caught all the London soot it can and has kept it on its surface, without imbibing it in the gentlemanly manner stone does. Such a material in London . . . is like an indiarubber collar . . . particularly distressing if left unwashed."

The analogy is weak, because it is surely more hygienic and more "gentlemanly" to wear a washed rubber collar than a linen one with dirt and grease ingrained. It is purely a matterf of taste whether dirty stone is preferable to clean terra cotta, &c., for the one is as durable as the other. To clean the former is laborious, costly, and destructive to the stone; to clean the latter you need but a hose or a bucket and mop.

This stigmatising of one material at the expense of another shows again how the masters themselves are divided; for Professor Reilly's strictures automatically condemn the architects of a score of fine London buildings—the Savoy, the Strand Corner House, the Regent Palace Hotel, that dignified pile, Copthall Chambers, in Copthall-court, the Spicer Building, Blackfriars, to name a wide variety—whose mellow tones are a joy to most beholders. Verily, in the multitude of counsellors there is—confusion.

DUDLEY CECIL DEVEREUX.

Rating and the Rent Act.

SIR,—I have already had occasion to write to you on this matter, and in again doing so offer as an apology its importance to those who, like myself, are suffering under the iniquity of section 12, subsection 9.

I have two leasehold houses, both of which were rated at £55 in 1914. I spent £1,000 in converting one of them into three residential self-contained flats in June, 1920. Each flat was let for £130 per annum inclusive, and each was rated at £72. On appeal the assessment was reduced to £70 each. That is to say, I am only allowed a net profit of about 5 per cent. on my outlay.

The second house, which adjoins and is identical with the above, is occupied by a wealthy squatter who has no agreement. He pays £88 rent for the whole house; when he does go I shall feel disposed to let the house rot rather than convert it under the present rating conditions.

Like your correspondent, I have never been able to obtain the concessions which this cleverly worded subsection clearly led one to suppose were to be given. The man still possessing faith in the equity of British law and its interpretation, is purely and simply being cheated.

ROBERT CROMER.

[*.* This letter is referred to on p. 92.—ED.]

Inquiries.

A correspondent inquires where he can obtain details and particulars of thatched roof work, particularly where the roof is in steelwork and octagonal in shape.

A correspondent writes: "I am served with a notice to reconstruct a drain which runs under my premises from the adjoining owner's property, but no part of my drain runs into it, being entirely the drain of the adjoining owner. I have a separate drain for my house running into an opposite direction. Am I compelled to relay or reconstruct another owner's drain running under my property?"

GESSO RELIEF.

By REGINALD HALLWARD.

Gesso relief is a sort of halfway house between the sculptor's and the painter's craft, and has quite a little niche of its own. For its qualities are native to it; without the particular characteristics which belong to itself, and which express a treatment quite its own, it has not much to recommend it. If used to express its own qualities and limitations it is a delightful material, and it is because of its beautiful qualities that it has been of use for so many centuries. The Egyptians mixed chalk with glue for some of their relief work. I like to make solemn declarations of the precedents lying behind the use of a material because they weigh so much in some minds, and this is of most ancient and respectable origin.

The materials used are of the simplest—gilders' whitening (slaked plaster of Paris) and glue mixed together. The whitening is dissolved in water, made into a thin paste, and the hot glue poured into it, stirring it together all the time. The amount of the glue required can only be ascertained as the result of experience—it becomes instinctive after a little practice—but the right proportions are essential to the security of the work. The application of the material is with a brush, but for the purpose of building up and reinforcing it, wadding, tow, string, wood, almost anything may be used. Very little comes amiss if used in its proper application. The thick felt paper placed under carpets, torn in shreds and soaked before use, is a useful material for building up with. The mixture having been made, and therefore warm as the result of the hot liquid glue poured into it (and be sure that the glue is perfectly clean and well dissolved), it is necessary to retain this warmth, otherwise the gesso will set as it grows cold; in order to prevent this the bowl of gesso is kept warm on a small stove, which will keep it at the right temperature for working. If, owing to an accident, it should become overheated and boil, its virtue is destroyed.

In the working of a relief in gesso the right preparation of the panel, whether of wood or other material, is a matter of primary importance. If wood, it must be well seasoned, and to prevent the pull of the gesso, in coating the panel, the gesso must be applied both sides. Bands of linen help to hold the panel together, which, if scale does not preclude, should be in one piece; if joined it should be well braced, and the strips of linen or other material help to strengthen it and hold the wood together; otherwise there will be an opening at the join. The front surface of the panel on which the relief is to be modelled should be then torn or scraped up, to obtain the texture or key that is necessary, and before placing the first coat over it, it is thought desirable by some to place a coat of size over the panel, though I have not always done this myself, nor have I found any harm to result in consequence. In gesso work we must not load on too much at a time, beginning with quite thin coats, and gradually increasing them, and between each coat the material must be left to dry, otherwise it will split from the varying moisture and density; and to expedite the modelling we may build up with the materials I have mentioned—wadding if it is for low reliefs, and coarser materials if for the higher portions. If we use bits of paper we must wet them first. I generally have a bowl of water by me with quantities of my material in it, which I fish out and dip into the gesso in applying them to the surface. It may be that we wish to raise a moulding round the panel of higher relief than the rest. Unnecessary time would be spent in building this slowly up with pure gesso, so, having wetted some thin laths or strips of wood, we block the moulding out, and then finish the contours in the gesso, modelling them as required.

When, after repeated coats put on with the brush, we have got the relief blocked in, reinforced by the wadding or other material used in building it up, it will be helpful, when dry, to work on it with a tool, in order to emphasise and give precision to the modelling. By this process, continued alternatively with coats of gesso floated on with a brush, we more quickly complete the work. But to retain the characteristic gesso quality its surface must always be retained, because the quality of gesso for low relief lies in this brush treatment, and is wholly different in effect to that of carved work, and we use the latter only as a means to the end.

There is an idea that the sticky, messy character of the material makes it disagreeable to work, and that it is troublesome as well, but this is an objection launched, I think, by those who are not sufficiently acquainted with the material to have passed the earlier stages. Any real intimacy with it, and such objections disappear altogether. The objection is similar to that sometimes brought against water colour—that it is more difficult to work than oil. All such objections, I think, stand below any intimate acquaintance with either. The adventure has not gone far enough to reach treatment. There is a peculiar charm in the very personal character of this sort of relief, and it is to be regretted that it has been so much displaced by the stereotyped wood carving which we associate so much with "ecclesiastical" work, which the machine governs almost

ST. COLUMBA.

ST. CUTHBERT.

ST. AUGUSTINE.

Coloured Panels in gesso relief round the pulpit, St. Alban's Church, Teddington.
By MR. REGINALD HALLWARD.

entirely. It offers an agreeable contrast to the more severe character of the wood mouldings and other ornament, and includes that variety in unity which gives richness to work of the kind. In looking at a reredos we have so often to feel that, respectably designed though it may be, it is all completed at the same rather conventional level, and suffers from the fact of its design reflecting but one mind, and that one hardly conscious at all of the graciousness of treatment, of the interest and variety which emerges through a more corporate approach. Gesso has fallen out of use a good deal through the separation of craftsmanship from architecture, and the dependence on more conventional sources for such detail. We want 100 per cent. work again, the best faculties in full use, exercised corporately. Then will there be that renewal of opportunity which is the only means of the best results and for the satisfaction of the worker.

Gesso panels and other ornament executed in this material are usually coloured and gilded, or subject to some other after treatment. Colour must be used very thinly, wiping it off with rags, and should in no way conceal the gesso surface. Anything like a thick coat of opaque colours is quite unsuitable. For the purpose of adding colour, soft rags rather than brushes may be used, the colour being wiped and coaxed, leaving more in the hollows. On the whole, and for architectural ornament, gilding treated afterwards with lacquers is the most agreeable. The surface, having been gilded and sized, colour can then be introduced with lacquer and other mediums. Each craftsman will no doubt find his own means, the means most suited to his own approach of beauty. Silver or aluminium leaf may be used very effectively for gold effects, getting these effects in the way followed in the treatment of the wooden bowls made in Russia and the East. In fact, its rich effect was first suggested to me through taking off the lacquer surface from one of these bowls, which I found to be gilded in silver, the rich gold colour obtained by lacquer and varnishes. In a subsequent article I am dealing more with the details of treatment, in the use of colour and gilding. There is a quality and beauty to be reached in this way of treating metal which is even richer than that obtained by gold leaf, and it has the merit of its comparative cheapness. These results are obtained through very simple materials, as is so often the case with the best effects, exalted not only by their own nature, but through the vision and adventure of the artist. In our fallen times and with our material approach we have so disestablished the everlastingly true values that we regard materials, not the artist. Raphael painted a masterpiece on the bottom of a tub, and the freedom of the arts when it comes will scatter all this cant of handicraft, this fetish of materials, for a humbleness that shelters under an inspiration which is not of materials or of time, but which transcends either. The use of gesso as a material over so many centuries, through Egyptian to mediæval and modern times, testifies to its permanence. I have never seen the slightest tendency to crack, or scale, or yield to atmospheric conditions in gesso work that has now had twenty-five years of testing, and see no reason to anticipate that such will be the case, and I cannot help hoping that the architect, as he feels the need of a craftsmanship more appreciative of scope and variety in its use of materials, will find a greater use for a form of ornament so attractive in combination with interior woodwork, panels, and other ornament.

Westminster Hall Timber.

The Office of Works has presented to the Royal Institute of British Architects a piece of timber from the ancient roof of Westminster Hall.

ART IN EDUCATION.

At the Conference of Educational Associations at University College last week, Sir Michael Sadler addressed the College of Preceptors on "The Growth of Bureaucracy in Education.' He said perhaps our educational bureaucracy would never be able to get over the fundamental difficulty caused by the emergence of the fact o, art in the vast fabric of routine. Possibly the dullness of bureaucratic life might be relieved by what was called "the human touch."

Mr. F. Roscoe, Secretary of the Teachers' Registration Council, said there was an increasing tendency for the administration to try to supersede the teacher and for the Board of Education to try to become the board of governors and headmaster of every school in the country.

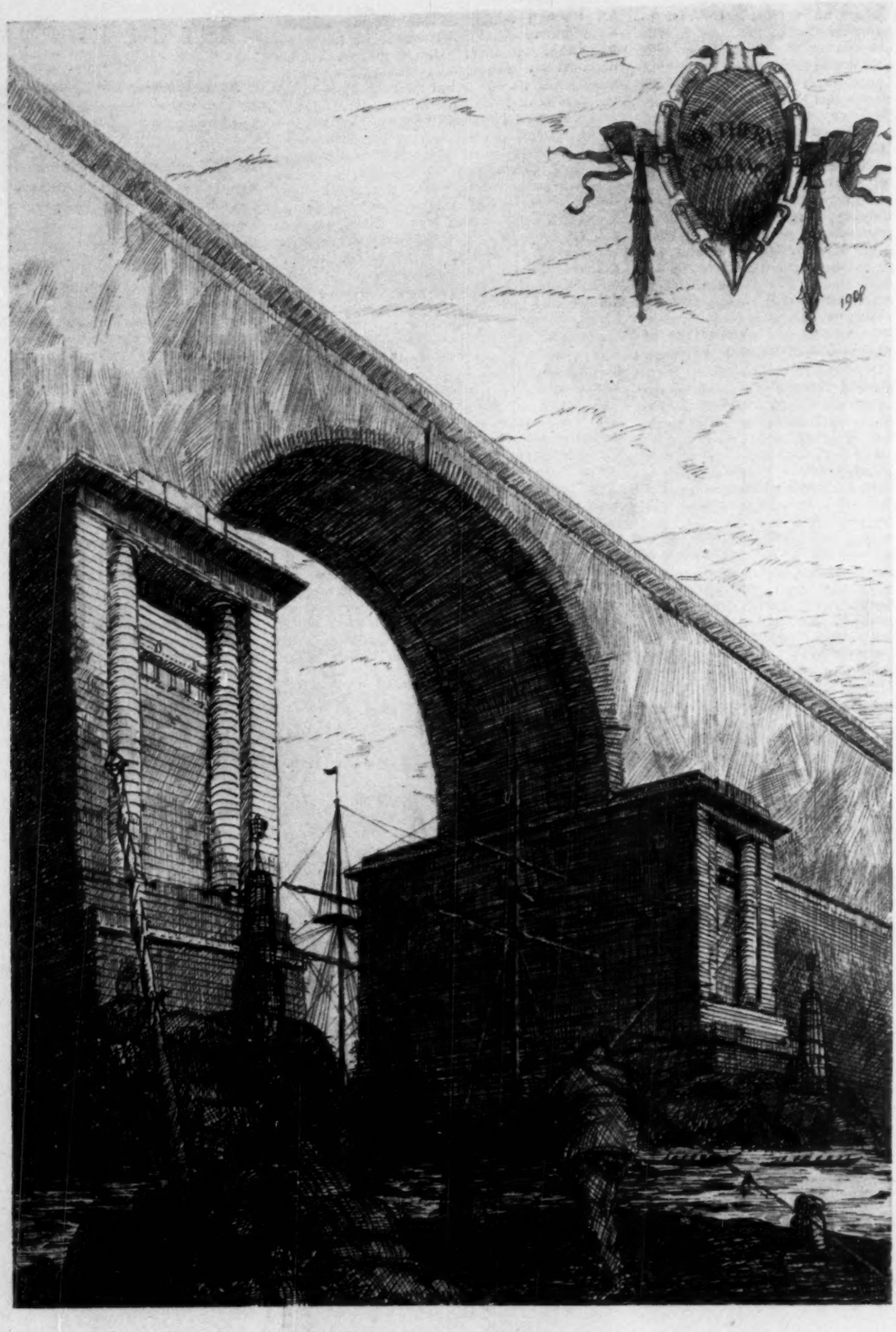
Sir Martin Conway, M.P., Director-Genera of the Imperial War Museum, gave an address to the Parents' National Educational Union on "How to Interest Children in Art." He insisted upon the importance of distinguishing between the creative and the receptive faculties in art. The teaching of art creation had no relation to a receptive attitude towards works of art, and in this respect a fundamental blunder had been committed which ran through our entire system of art education. In the absence of an understanding taste among the purchasing public, young artists of fine capacity were atrophied because they could not live by producing the best kind of thing of which they were capable. It was of the greatest importance for the improvement of the art of the country to improve the receptive faculty of the people broadly, at any rate, that portion who wished to spend money on beautiful things. For the most part children appreciated quickly and instinctively some kinds of really good art.

ST. AIDAN.

ST. WILFRED.

ST. PAULINUS.

Coloured Panels in gesso relief round the pulpit, St. Alban's Church, Teddington.
By MR. REGINALD HALLWARD.



A DRAWING. By MR. G. GILBERT SCOTT, R.A.

From the Phantasy Exhibition at the Architectural Association.

CONSIDERING how seldom the architect can let himself go—indulge in dreams of form and colour which have no practical limitations—we cannot wonder that the indulgence in phantasies may be a relief and a pleasure. Such, we think, must have been the feelings of those who have contributed to the present exhibition of the A.A. Some of the results are fine and effective, far beyond the ordinary. Such are Mr. P. D. Hepworth's Classic interior, forcibly rendered in chalk, and Mr. Geo. Gilbert Scott's beautiful luminous pen drawings of an interior monument and a bridge also Mr. T. Frank Green's colour sketch of Le Monte de Piété, and Mr. Keesey's dramatic chalk interior. More allied to practical possibilities may be Mr. Howard Robertson's Grand Hotel, an admirably grouped building effectively rendered in pencil, or his suggestion for a big store. Several drawings will claim the interest of those who are wise enough to spare time for a visit to the A.A. We hope the gaiety and freedom which such an exhibition engenders will lead to further similar shows, and that "young men may dream dreams and old men see visions" to illuminate the dulness that besets our everyday life.

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ILLUSTRATIONS.

78-80, Cornhill.

We illustrate the new premises for the Union Insurance Society of Canton, Ltd., at 78–80, Cornhill. The architects are Messrs. Gunton & Gunton.

Territorial Headquarters, Ampthill, Beds.

The conversion recently carried out to these premises included: A canteen and quarters for officers and men; drill hall; miniature rifle range; and quarters for resident Sergt.-Major. The premises, known as the "King's Head," comprise some buildings of the Tudor era. About the year 1730 the existing work was reconstructed and refaced to accord with the remaining brick treatment, which is a conspicuous feature of this part of Bedfordshire. In 1921 the licence lapsed, and the premises remained closed until the War Office Authorities decided to purchase the freehold and convert the buildings for the purpose of headquarters for the local Territorial Association. The work has been done with due respect to existing features; nothing has been disturbed, and the wrought-iron sign, which had been removed, has been replaced with the addition of a finely-painted crest of the Bedfordshire Regiment.

Mr. T. Sharpe, of Ampthill, was the contractor, and Messrs. Richardson & Gill the architects.

Hastings Music Pavilion.

We illustrate this week the design submitted in this competition by Messrs. Brownrigg and Hiscock. The conditions stated that the external walls of the building should be of brick, or concrete faced with plaster or similar material, and a modern rendering in the Egyptian manner was considered by the authors to be suitable. Seating was required for 2,000 people, in balcony, tier, and chair seats, the latter being removable to provide space for dancing. Smoking, reading, and tea-rooms are provided on ground floor, and lavatory accommodation off the main staircases at mezzanine level. A condition was that the Sunbeam Museum, presented to the town, was to be incorporated in the design.

An open-air promenade at the balcony level was required, and this is provided to overlook the sea. In the principal elevation an attempt has been made to obtain an imposing façade at minimum cost. The condition stated that the cost of the building was not to exceed £60,000.

The design placed first, by Messrs. Hugh Morgan & Charles Cowles-Voysey, AA.R.I.B.A., was illustrated in our issue for February 3, 1922.

"The Builder" Calendar.

The Builder Calendar is given in this issue.

OBITUARY.

Mr. A. R. Wood.

Mr. A. R. Wood, Lic.R.I.B.A., M.S.A., of the firm of Messrs. Wood & Goldstraw, A.R.I.B.A., architects and surveyors, Town Hall, Tunstall, Stoke-on-Trent, died very suddenly at his residence in Wolstanton recently. He had been in practice in Tunstall for practically fifty years, and prior to the federation of the Pottery towns, held the post of Surveyor to the late Tunstall Urban District Council for thirty-five years, in addition to his private practice.

He was architect to the Education Committees of Tunstall and Burslem previous to amalgamation with Stoke-on-Trent, and erected a large number of schools. He was formerly associated in partnership with Mr. John Hutchings, but of late years his partners were his son, Mr. W. H. Wood, and Mr. Harold Goldstraw, A.R.I.B.A. He was responsible for the erection of many of the important buildings in the Potteries district, including the Town Hall, Victoria Institute, Public Baths, Free Library, &c., at Tunstall, several local police stations, banks, and also numerous china and earthenware manufactories in this country and abroad.

The business is being carried on by the two surviving partners.

Mr. S. Bentley Rudd.

A correspondent sends us the following:—

By the passing of Mr. Samuel Bentley Rudd, of Grantham, in his eighty-third year, the building trade is poorer by a notable figure. Up till about two years ago, when failing health caused him to retire from active business, Mr. Bentley Rudd was head of the firm of Rudd & Son, a name which he had made stand for work of the highest character. He carried out works of considerable size, but the work which he excelled in and which was nearest his heart was the building and repairing of churches. From the architect's point of view, Mr. Bentley Rudd was an ideal builder in every way. He had worked for practically all the able church architects of the latter half of the nineteenth century, from Pugin, Gilbert Scott, Brooks, Pearson, Bodley, Blomfield, and a host of almost-forgotten people, to Tapper, Temple Moore, and Nicholson.

From his long experience he was ever ready with assistance in overcoming difficulties, and though his suggestions were never obtruded yet architects could depend on his sound advice.

He had the trust and confidence of every architect for whom he worked; his works being done by a trained body of workmen whom he knew and who knew him, had that personal touch which is essential for all work of the highest class. He had served his town well, having been Mayor as far back as the first Jubilee, and was for forty-one years guardian of his parish church as churchwarden. His pride in the good work which he did was only excelled by his joy in the doing of it.

MEETINGS.

FRIDAY, *January* 12.

London Society.—Mr. J. P. Orr on "Transport and Open Space Problems in City Development." At 18, John-street, Adelphi, W.C. 2. 5 p.m.

WEDNESDAY, *January* 17.

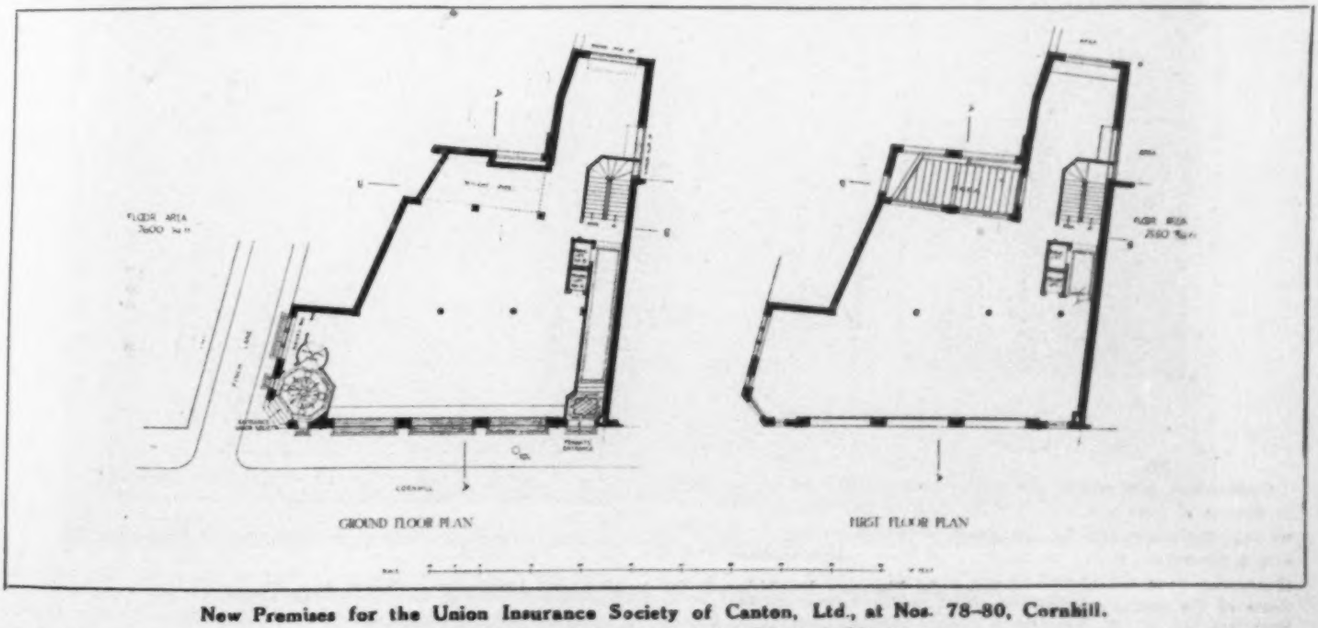
Royal Society of Arts.—Mr. C. A. Klein on "Hygienic Methods in Painting: The Damp Rubbing-down Process." At 18, John-street, Adelphi, W.C.2. 8 p.m.

Northern Architectural Association.—Mr. N. Lloyd on "Rise and Decline of English House Design." At 6, Higham-place, Newcastle-on-Tyne. 7.30 p.m.

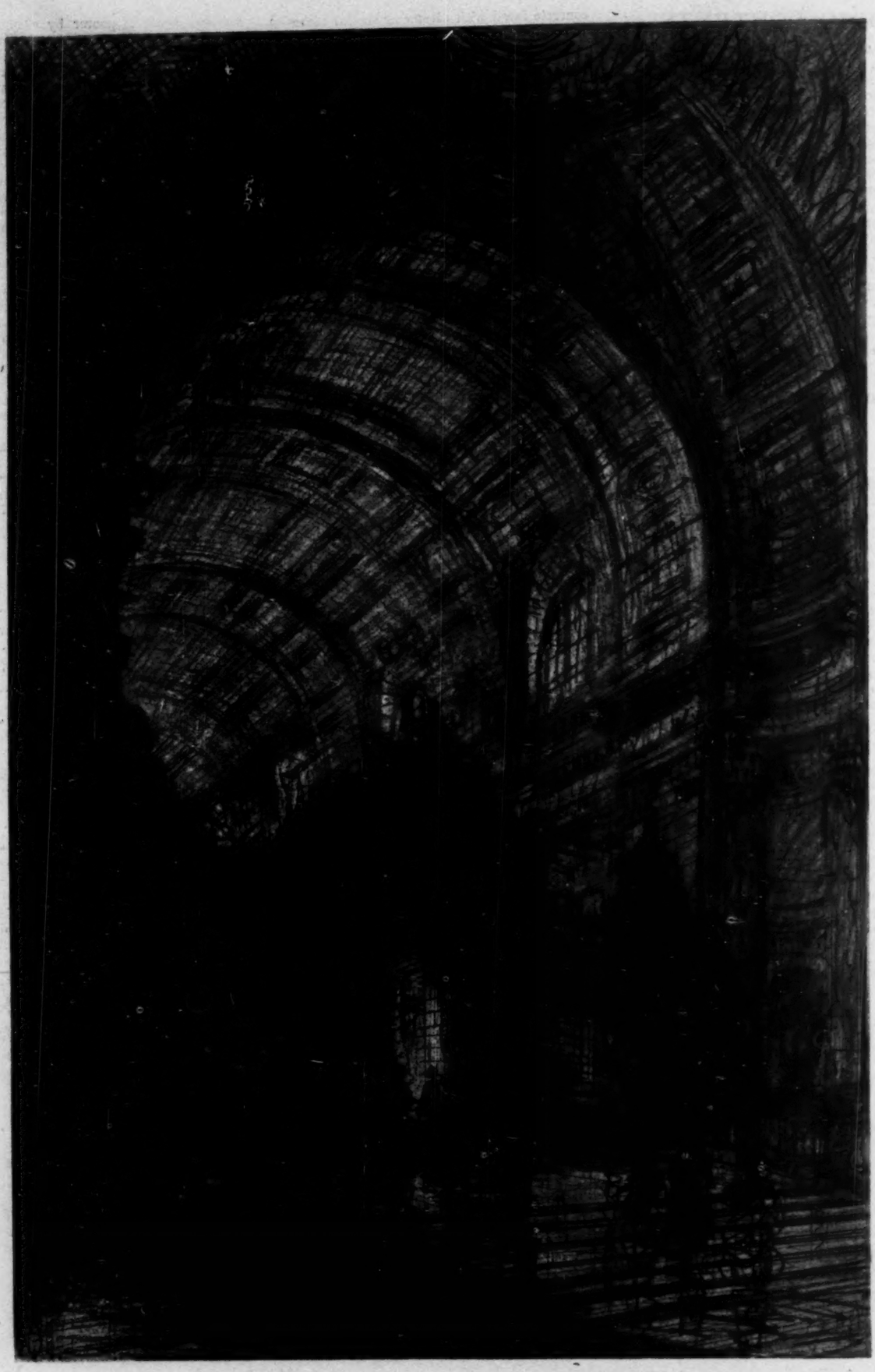
THURSDAY, *January* 18.

Society of Antiquaries.—Mr. C. L. Kingsford on "Essex House, formerly Exeter Inn and Leicester House." At Burlington House, Piccadilly, W.1. 8.30 p.m.

Edinburgh Architectural Association.—Professor G. Baldwin Brown on "Work of the Mediæval Builder." At 117, George-street. 8 p.m.

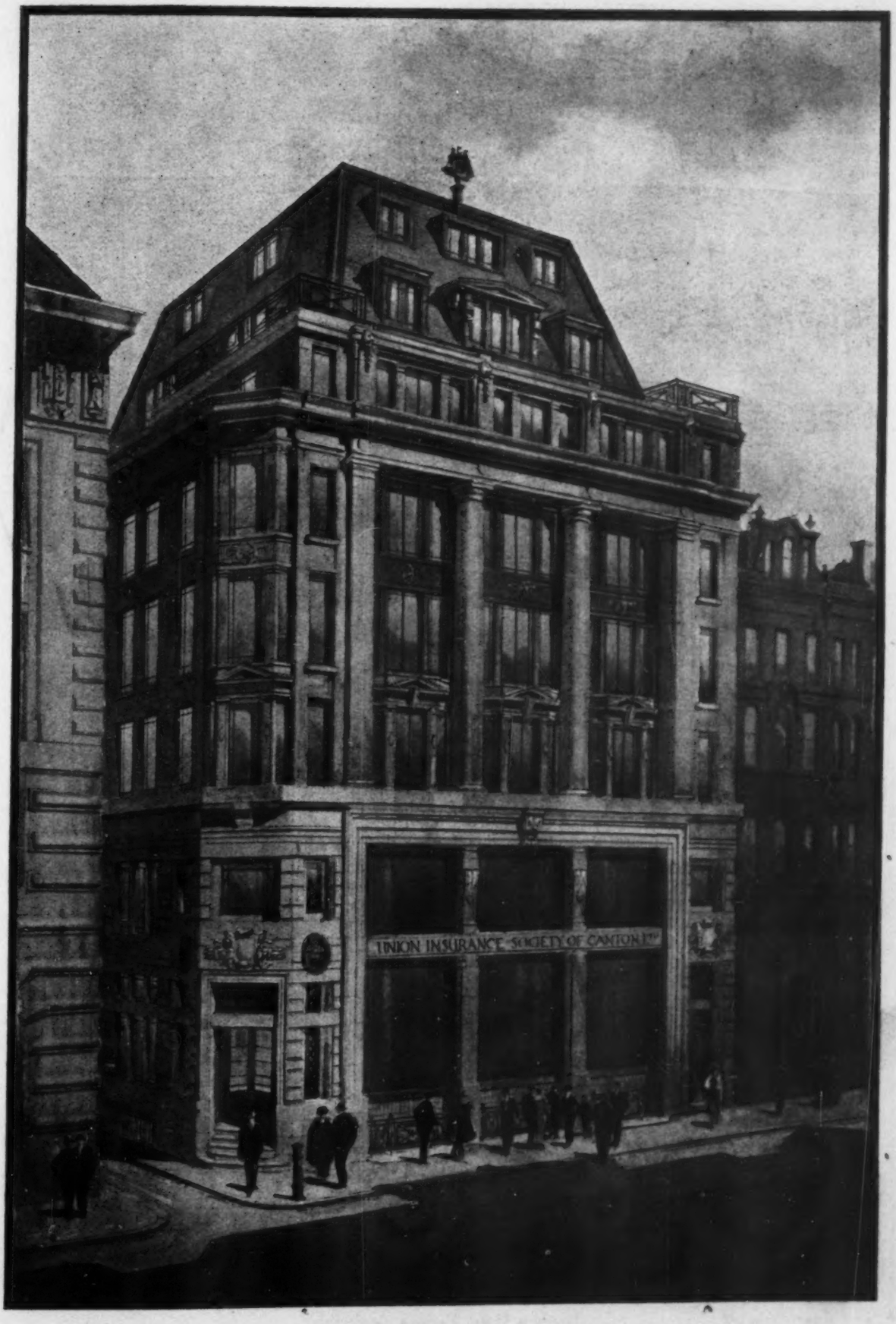


New Premises for the Union Insurance Society of Canton, Ltd., at Nos. 78–80, Cornhill.
MESSRS. GUNTON & GUNTON, F. & A.R.I.B.A. Architects.



Une Cloture. By MR. P. D. HEPWORTH.

From the Phantasy Exhibition at the Architectural Association. (*See p.* 80.)



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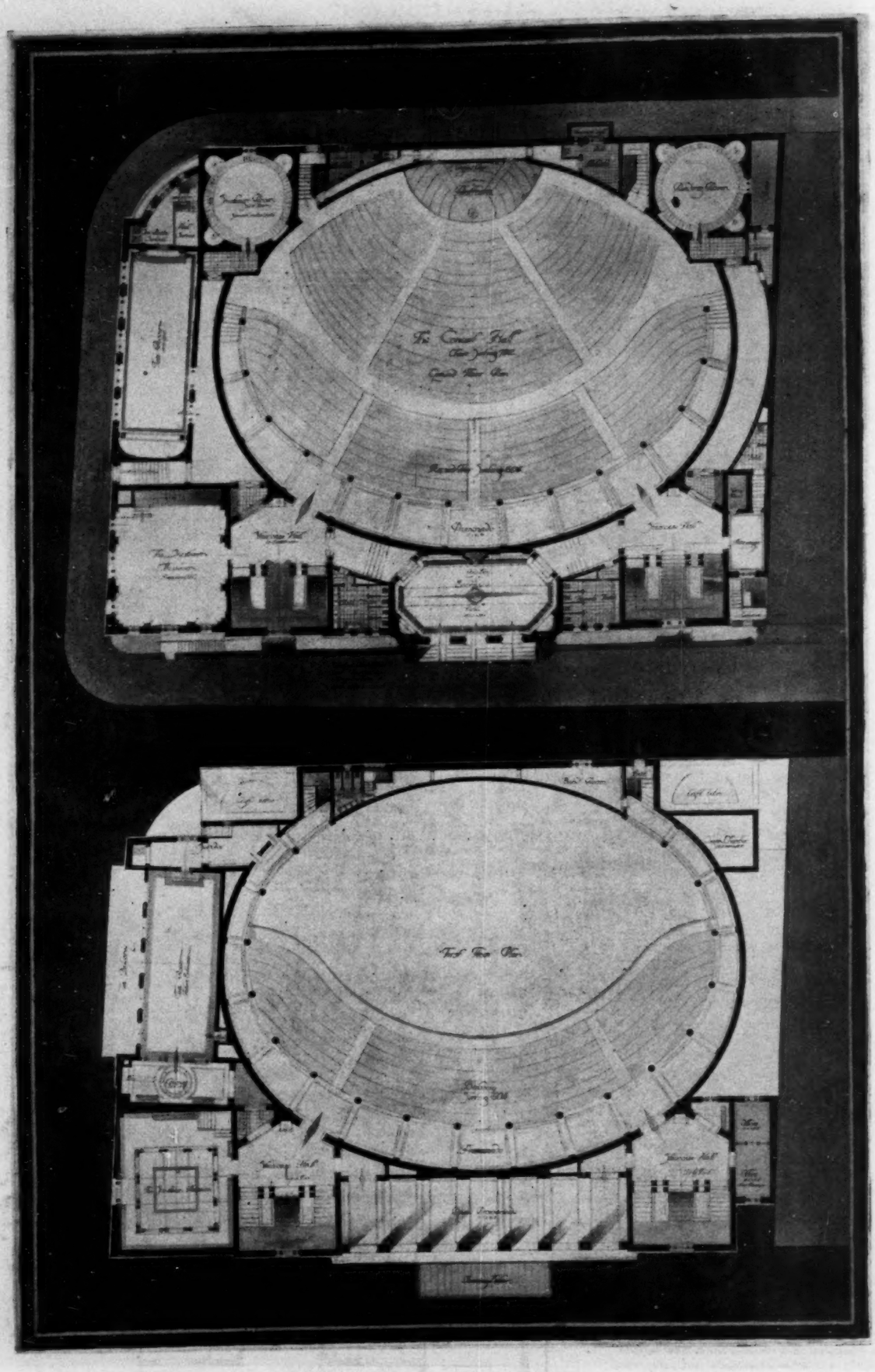


Hastings Music Pavilion Competition:

Design submitted by MESSRS. A. H. BROWNRIGG, F.R.I.B.A., and L. R. HISCOCK. (*See p.* 81.)

THE IDEAL BUNGALOW COMPETITION.

We reproduce on this and the following page designs in the recent "Daily Mail" Bungalow Competition. We have also received the following letters bearing on the competition :—

SIR,—Will you allow me to make a few remarks on the premiated designs for the above? The conditions say the chambers are to have double beds 4 ft. 6 in. by 6 ft. 6 in., single beds, 3 ft. by 6 ft. 6 in., shown on the plans. It is left to the competitors as to how many rooms shall have full-size beds. There is no size given for bedrooms; it is generally understood that 500 cubic ft. should be allowed for each person, and that rooms should be so placed that the furniture should be conveniently arranged. Demand for a better type of bungalow and a high architectural standard of design are expected

A casual glance at the designs may give the idea of good compact arrangement and planning, but this will soon disappear with an examination into details. There appears to be some doubt in the conditions as to whether the maids bedroom is for one or more maids; in one case the conditions say "provided for maids," then the word is maids' and also maid's, whatever the intention may have been. The right thing to do would be to make the room suitable for two maids, i.e., a general and a nurse.

First Premiated Design: No doubt this is the best of the three designs, but the beds are shown 4 ft. wide only, and there is only one decent bedroom; except the main passage, the others are only 2 ft. 6 in. wide; the w.c.'s are only 2 ft. 6 in. wide, and there are three doors in the kitchen, the one into the larder being about 2 ft. wide. The larder is about 4 ft. by 2 ft. 6 in., the dining room is 13 ft. 6 in. by 9 ft. 6 in. The perspective view speaks for itself.

Second Premiated Design: This plan is confused with lines apparently representing nothing. None of the bedrooms are good; No. 3 is bad; dining room, 10 ft. 6 in. by 12 ft., not so large as the living room in a working man's dwelling; there are two doors opening into the passage and half of one side of the room is taken up with two doors and something else; w.c.'s 2 ft. 6 in. wide.

Third Premiated Design: There is one good bedroom, one has no fireplace, and is 8 ft. square. The dining room is the best of the three designs, but it is badly lighted, and there is no necessity for two doors; in fact, this spoils the room. Passages and w.c.'s 2 ft. 6 in. wide. Maid's bedroom, 5 ft. 6 in. wide—too small to put in a bed, so this is not shown. Larder 1 ft. 6 in. wide.

Generally, all three designs are on the same lines; all have kitchen arrangement at one end and bedrooms at the other; difficulty with getting hot water for bath and chambers. Maids' rooms bad generally; convenient for mistress in dining room to know what is going on in maids' room, and for maids to know what is going on in dining room. Drawing room appears to be the more important room than the dining room. The arrangement for the maids makes one think that anything will do for them; in no case is a fire provided in their sitting room, and in one case a gas stove ventilating into cavity in hollow wall.

The elevations of 1 and 2 are very much alike, the only difference being that in No. 2 the brickwork is coursed. No. 3 is made to look nice by a raised and stepped terrace, sloping and wooded background, embellished with a lily pond in the foreground, none of which forms part of the design.

J. Ls.

SIR,—Judging from the awards in this competition, one might very reasonably assume that the problem was: What to do with a barrack hut. As a business proposition for a new building the prize designs are obviously unthinkable. Who on earth wants to pay for a 100 ft. frontage for a small bungalow? The length of the external walling in the design placed first exceeds the possible minimum by about 60 ft. run, which means that with careful and compact planning the whole of the back wall might have been eliminated and thus effect a considerable saving in the cost of erection. In these days of high costs economy in planning is of the utmost importance.

Isn't it appalling the money that is being wasted on these ill-conceived housing competitions? Properly conducted, what a useful purpose they could be made to serve, both for the benefit of the public and the profession! It is, of course, useless trying to produce the ideal by obsolete and antiquated methods. The thousands of pounds wasted on housing competitions ought to be a sufficient object-lesson of what the present methods produce.

"MODERNIZE."

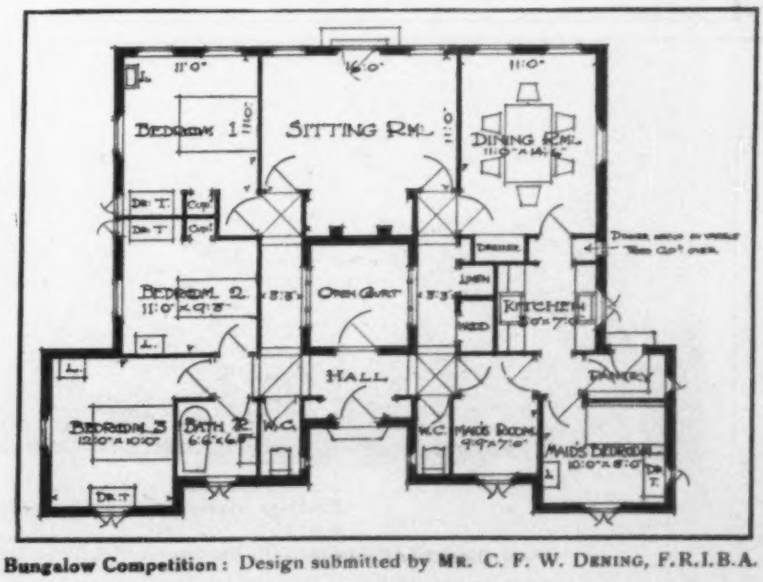
New Surrey Arterial Roads.

The Surrey County Council, on Tuesday, decided to co-operate with the Ministry of Transport and the London County Council in the construction of two new arterial roads in Surrey, and the work is to be put in hand at the earliest possible moment.

TOWN PLANNING.

Speaking on the subject of "Town Planning," at the Rotary Club luncheon, Hotel Cecil, recently, Mr. Hill-Willis, Borough Surveyor of Tilbury, said that town planning, with its intelligent anticipation of the future and attempts to safeguard its development, was one of the most important undertakings that any authority interested or responsible for the growth of a town could be expected to consider. In dealing with the growth of a town, it was necessary to have some knowledge of those things which cause movements in populations, and which had been the cause of local changes. Such a knowledge could only be acquired by reference to history and statistics. To the town-planner a new interest attached to every town. Careful comparison revealed an organic system in the arrangement of streets which was not apparent to the causal observer. How few had realised that in a town on a water front the most important street was almost universally the second street parallel with the water front, and how few realised that the functions of all towns were very similarly arranged.

The lesson they learnt from the planning of Roman colonial and provincial towns was that the main street invariably intersected the centre, that the principal open space, the



Bungalow Competition: Design submitted by MR. C. F. W. DENING, F.R.I.B.A.

Forum, was either intersected by, or contiguous to, the main street of the town; that amongst the older of the public buildings were the temple and the theatre, which, in the older examples were always placed in close relation to the Forum—indeed, that the Forum with those buildings formed the civic centre. In Rome itself the palaces of the Cæsars and the homes of the most influential and wealthy vied with temples for a site contiguous to the Forum.

THE SOCIETY OF ARCHITECTS.

THE annual report of the Council of the Society of Architects has just been issued. In addition to those matters already announced in our pages, the following extracts are of interest:—

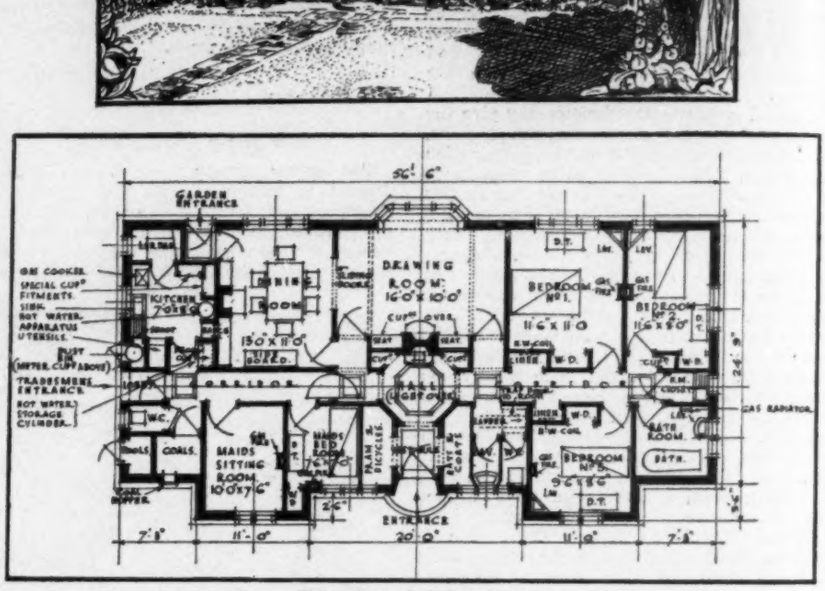
The Practice Committee report that a total of one hundred and forty-six applications were received for admission to the various classes of membership, of which one hundred and fifteen were admitted, including twenty-two transfers to a higher class, and five members were reinstated. The Society lost nine members by death, and thirty-three by resignations and lapses, and three members were transferred to the retired list, the total strength of the Society on October 31, 1922, being: Fellows, 201; Members, 1,135; Hon. Members, 24; Retired Members, 38; Licentiates, 129; Students, 117; a total of 1,644, being a net total increase of fifty-two over last year.

With regard to the scale of professional charges, the Committee state that the Society's representatives met a sub-committee of the R.I.B.A. on suggestions made to the Institute by the Society relating to proposed amendments to the Scale calculated to adjust certain discrepancies in the corresponding scales issued by other professional bodies and by Government Departments. It had not been thought desirable to alter the Scale at present, but it was understood that the R.I.B.A. would make representations to the Government Departments concerned on the points suggested by the Society.

At the request of several members, the Committee gave consideration to the proposals which had been made for further facilities for increasing the height of buildings, and a referendum of the London members of the Committee revealed the fact that those who expressed their views, with one exception, favoured the action taken by the R.I.B.A. in the matter.

The Examination Committee decided to revive the Society's correspondence courses in architectural design which were discontinued in 1907, and to re-establish them on lines which it was hoped would do something towards giving training in those subjects to students who were unable to attend other courses. The Committee also had under consideration a scheme of scholarships and maintenance grants to assist students in going up to the architectural schools.

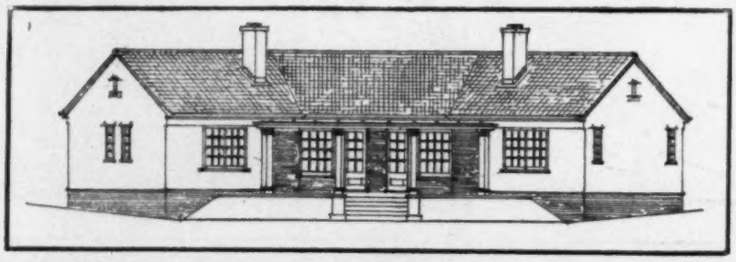
With regard to the question of Unification and Registration, it was reported that the completion of the Committee's report had been delayed by difference of opinion amongst the Institute representatives on questions of detail and of procedure. A majority of the Committee considered Unification to be an essential preliminary to Registration and a minority of Institute representatives held the opposite view. In the meantime the R.I.B.A. Council election of June, 1922, resulted in a victory for the minority party, and the first act of the new Council was to pass a resolution purporting to dissolve the Unification and Registration Committee and to discharge its members. The representatives of the Society, who had taken an active part in the proceedings since March, 1920, were in agreement with the views of the majority and were of the opinion that the Council of the Institute was acting unconstitutionally in purporting to dissolve the Committee without consulting its constituent bodies, and obtaining their consent and that of the general body of the R.I.B.A.

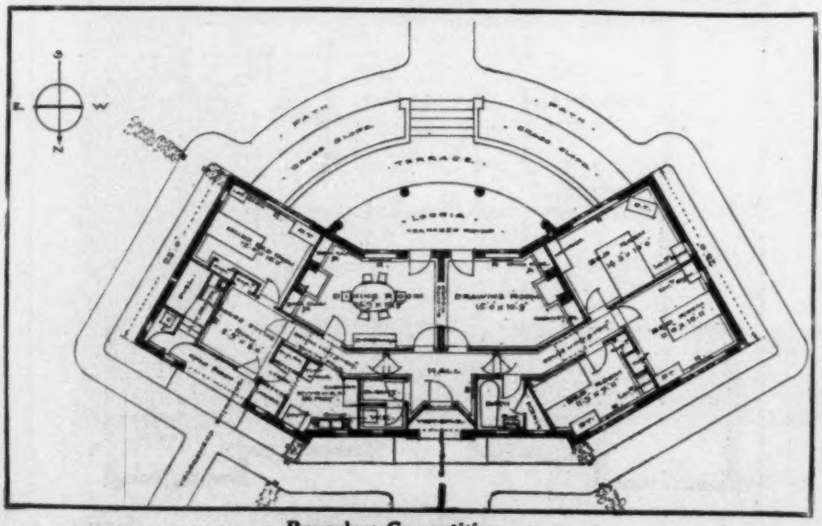


Bungalow Competition.

Design submitted by MR. GEORGE A. BRYAN, A.R.I.B.A.

[All external walls 9-in. brickwork roughcasted. Brick plinth tarred. Main entrance and chimney stacks in purple bricks.]





Bungalow Competition.

Design submitted by MR. T. J. ANDERSON.

BOOK REVIEW.

Beetles Damaging Seasoned Timber with an account of their ravages and the methods of treatment. By A. M. ALTSON, F.E.S. (London: William Rider & Son, Ltd. Price 2s. 6d. net.)

In these days of dear timber the ravages of insect pests assume an importance which justifies active measures of repression on the part of those who store or handle wood in any form, and this small book should be consulted by all timber merchants, carpenters, and joiners. With the scarcity of timber occasioned through lavish expenditure during the war, and in view of the uneconomical position in regard to the renewal of supplies by forestry throughout the whole world, losses of seasoned wood are more than ever serious. At the same time the opening up of new sources of supply has favoured the spread of wood borers which have been carried into England in great numbers during the last few years. The high cost of wood has also encouraged merchants and manufacturers to take risks in the employment of infested pieces which may act as centres from which the beetles can multiply and extend their ravages. These losses have an enormously high monetary value in any case, and especially where infestation destroys costly labour in joinery as well as material, or involves danger to structures, peril to life and limb and consequent legal liabilities.

The author gives practical advice concerning measures to control the ravages, preventive and remedial treatment, in addition to a highly interesting account of the life history of some of the kinds of beetle most common in England, of the "two distinct but closely related families, the one called Lyctidæ and the other Anobiedæ."

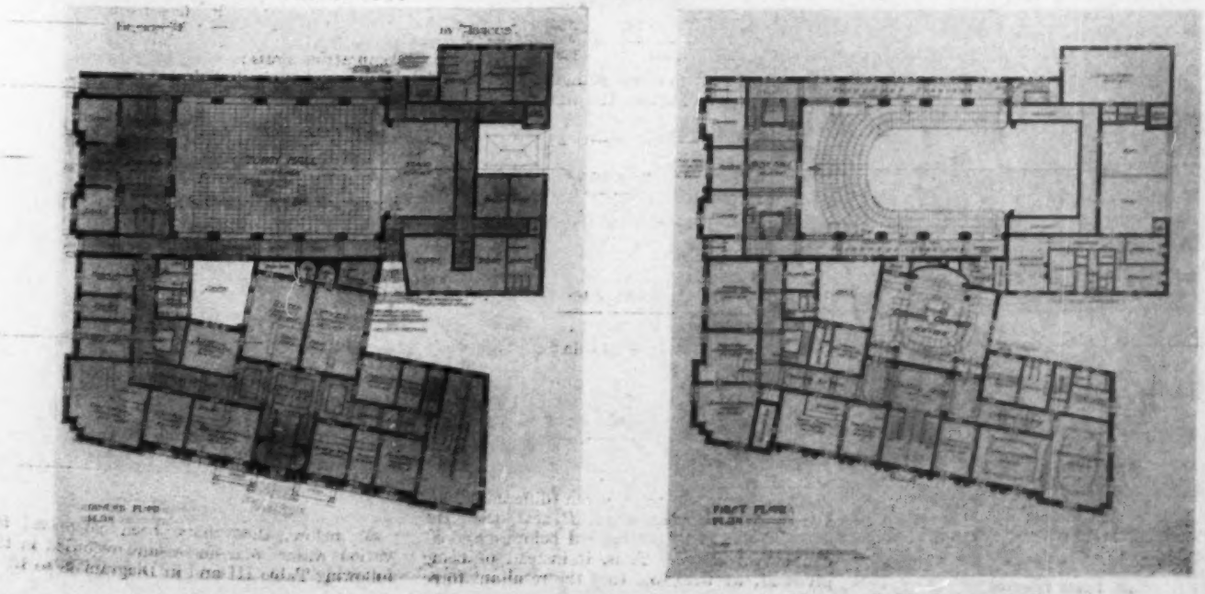
This excellent description contains an inadvertent suggestion in the opening sentence that beetle larvæ are capable of breeding, but the rest of the account is thoroughly up-to-date, and includes information gained in the author's personal researches and from reference to the notes of Professor Maxwell Lefroy, who was called in to devise means of exterminating the Death Watch Beetle in the timbers of Westminster Hall.

Several original photographs very much larger than the objects are included in illustration of the book. The photograph of damaged pieces of wood from Westminster Hall correctly indicates "worm" holes of from one-tenth to one-eighth of an inch in diameter, and the author's estimate of the size of the larva must be accepted as applying to exceptionally large specimens:—

"When full grown, the larva is not far short of half-an-inch in length, and about from a sixth to a quarter of an inch in width across its widest part—just at the back of the head."

CAST IRON RESEARCH.

A twelve-page pamphlet issued by the British Cast Iron Research Association gives a concise and quite inspiring account of the work of the Association under the direction of Dr. J. F. Fletcher. It forms an extract from the first Bulletin issued to members of this Association, and presents an epitome of the work accomplished. Cast iron was in times past used extensively in construction, and for heavy work where stresses are compressional there is no reason why its use should not be extended. Any researches which will enable architects and engineers to regard the material as more reliable and constant in quality for their specific purposes will undoubtedly aid its wider utilisation. Experiments are reported as in progress upon shrinkage and draws, moulding sands, motor cylinders and refractories. We agree with the Directors' remarks that design has much to do with defects due to porosity grains and so on, hence the most suitable mixture for running castings should be determined and adopted for the class of work to which it is most appropriate. Cast irons vary from grey soft iron to white brittle iron, and at present the user is largely in the maker's hands as to the material turned out. Those interested in these researches are invited to write to the Secretary of the Association at Central House, New-street, Birmingham.



Colwyn Bay Town Hall Competition: Design placed First, by MESSRS. J. M. PORTER & CO.

DESIGN OF REINFORCED CONCRETE MEMBERS.*

BENDING AND COMPRESSION.

BY OSCAR FABER, O.B.E., D.Sc. (*Continued from p. 52.*)

WHEN a member is subject to a compressive force or forces the resultant of which do not lie on the centroid or centre of gravity of the section, they have to resist a moment as well as the direct stress.

If e is the distance of the resultant force P from the centroid, then the moment is

$$M = e\,P.$$

This is the way the problem is usually presented, say with a load resting on a bracket.

Conversely, when M and P are known,

$$e = \frac{M}{P}$$

which gives the distance of the resultant from the centroid.

CASE I: WHEN THE ECCENTRICITY IS SO SMALL THAT NO TENSION IS DEVELOPED IN THE MEMBER.

This requires e to be less than $\cdot 166\,d$ for non-reinforced members, and in reinforced members the limit depends on the percentage and position of the reinforcement, but in usual practical cases may be taken as limited to about $e < \cdot 25\,d$.

The direct stress, uniform over the whole area, is

$$c = \frac{P}{A_E}$$

Where A_E is the equivalent area, *i.e.*, the area of concrete plus $(m-1)$ times the area of steel

$$A_E = A + (m-1)\,A_L$$

The bending stress at the edge is given by

$$c = \frac{M\,y}{I_E} = \frac{M}{Z_E}$$

Where M is the moment,

y is the distance of the edge from the centroid.

I_E is the equivalent moment of inertia of the section, that is, the moment of inertia of the section after replacing each area of steel with $(m-1)$, its area of concrete.

Z_E = equivalent modulus of the section $= \frac{I_E}{y}$

For unsymmetrical sections, the distances, y, of the edges may be dissimilar, and the combined stresses at the edges will be given by

$$c_1 = \frac{P}{A_E} + \frac{M\,y_1}{I_E}$$

$$c_2 = \frac{P}{A_E} - \frac{M\,y_2}{I_E}$$

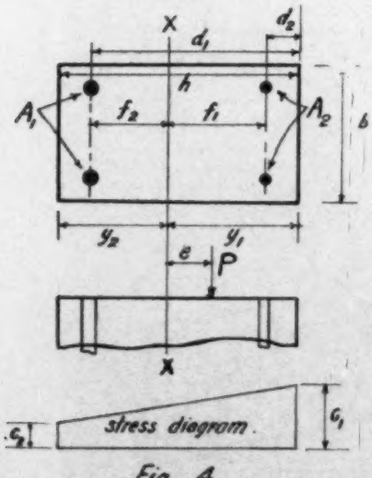


Fig. 4

The position of the centroid is given by

$$y_1 = \frac{\frac{b\,h^2}{2} + A_1(m-1)\,d_1 + A_2(m-1)\,d_2}{b\,h + A_1(m-1) + A_2(m-1)}$$

In the case of a rectangular section, symmetrically reinforced, the centroid is central, and $y_1 = y_2$.

EXAMPLE OF A SYMMETRICAL SECTION.—A column, 18 in. × 12 in., with 4—1¼ in. rods, having 1½ in. cover of concrete, has a load of $P = 100{,}000$ lb. and a moment of $M = 200{,}000$ in. lb. about its shorter axis. Calculate the stresses.

Solution.—In Fig. 4, $h = 18$, $d_1 = 16$ in., $d_2 = 2$ in., $A_1 = 3{\cdot}52$, $A_2 = 3{\cdot}52$, $b = 12$. The equivalent area—

$$\begin{aligned} A_E &= A + (m-1)\,A_L \\ &= 18 \text{ in.} \times 12 \text{ in.} + 14 \times 4 \times 1{\cdot}76 \\ &= 216 + 98{\cdot}6 \\ &= 314{\cdot}4 \text{ in.}^2 \end{aligned}$$

The equivalent moment of inertia—

$$\begin{aligned} I_E &= \frac{b\,h^3}{12} + (m-1)\,A_L \cdot f^2 \\ &= \frac{12 \times 18^3}{12} + 14 \times 7{\cdot}04 \times 7^2 \\ &= 5840 + 4850 \\ &= 10{,}690 \text{ in.}^4 \end{aligned}$$

$$c_1 = \frac{P}{A_E} + \frac{M \times \frac{h}{2}}{I_E}$$

$$= \frac{100{,}000}{314{\cdot}4} + \frac{200{,}000 \times 9 \text{ in.}}{10{,}690}$$

$$= 319 + 172 = 491 \text{ lb./in.}^2$$

and $\quad c_2 = 319 - 172 = 147$ lb./in.^{2}

EXAMPLE OF AN UNSYMMETRICAL SECTION.—Let us repeat the last example, but with the steel on the more highly compressed side omitted, as would be the case in a singly reinforced section. The section is then unsymmetrical. In Fig. 4, $h = 18$, $b = 12$, $d_1 = 16$, $A_1 = 3{\cdot}52$, $A_2 = 0$.

The first thing is to find the distance of the centre of gravity from the compressed face. Let this be called g. Taking moments of the areas about the compressed edge, we have

$$A \times 9 \text{ in.} + A_L \times (m-1) \times 16 \text{ in.} = A_E \times g$$

substituting

$$\begin{aligned} A &= 18 \times 12 = 216 \text{ in}^2. \\ A_L &= 3{\cdot}52 \text{ in.}^2 \\ A_E &= A + A_L(m-1) \\ &= 216 + 14 \times 3{\cdot}52 = 265{\cdot}4 \end{aligned}$$

We have

$$g = \frac{216 \times 9 + 3{\cdot}52 \times 14 \times 16}{265{\cdot}4}$$

$$= \frac{1954 + 789}{265{\cdot}4} = \frac{2743}{265{\cdot}4} = 10{\cdot}3 \text{ in.}$$

The equivalent moment of inertia, Ie, which must be measured about the centroid—

$$\begin{aligned} I_E &= \frac{b y_1^3}{3} + \frac{b y_2^3}{3} + (m-1)\,A_L \cdot f^2 \\ &= \frac{12 \times 10{\cdot}3^3}{3} + \frac{12 \times 7{\cdot}7^3}{3} + 14 \times 3{\cdot}52 \times 5{\cdot}7^2 \\ &= 4360 + 1830 + 1610 = 7800 \text{ in.}^4 \end{aligned}$$

$$c_1 = \frac{P}{A_E} + \frac{M\,y_1}{I_E}$$

$$= \frac{100{,}000}{265{\cdot}4} + \frac{200{,}000 \times 10{\cdot}3}{7800}$$

$$= 376 + 264 = 640 \text{ lb./in.}^2$$

$$c_2 = \frac{P}{A_E} - \frac{M\,y_2}{I_E}$$

$$= \frac{100{,}000}{265{\cdot}4} - \frac{200{,}000 \times 7{\cdot}7}{7800}$$

$$= 376 - 197 = 179 \text{ lb./in.}^2$$

If the problem were given differently, by stating the point at which P acts, then the centroid has to be determined before e and M can be calculated. Thus, if instead of being given M, we were told that the resultant force acted 3 in. inside the compressed face, then we should need to calculate the position of the centroid as above ($g = 10{\cdot}3$ in.), whence

$$e = g - 3 \text{ in.} = 7{\cdot}3 \text{ in.}$$

and

$$M = P \times e = 100{,}000 \times 7{\cdot}3 = 730{,}000 \text{ in./lb.}$$

CASE II: WHEN THE ECCENTRICITY IS SUFFICIENT TO PRODUCE TENSION, VALUES OF e UP TO $1{\cdot}6\,d$.

This case includes cases from about $e = \cdot 25\,d$ (depending on the percentage of steel). The solution follows closely that given for bending and tension, and may, therefore, be given with less explanation. As before, a series of diagrams (8 to 14) are produced, from which actual design is very greatly simplified. These are calculated,

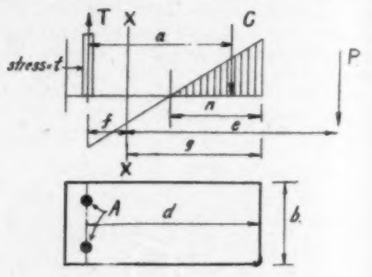


Fig. 5.

as before, by assuming a definite value for n and r, and calculating all the other quantities therefrom. Then, by a method of calculation exactly similar to that used with bending and tension, we derive the formulæ:—

Ratio of stresses:

$$t_1 = \frac{t}{c} = \frac{m(1-n_1)}{n_1} \qquad (1)$$

Depth of centroid:

$$g_1 = \frac{g}{d} = \frac{m\,r \times \frac{n_1^2}{2}}{m\,r + n_1} \qquad (2)$$

Centroid from steel:

$$f_1 = \frac{f}{d} = \frac{n\left(1 - \frac{n_1}{2}\right)}{m\,r + n_1} \qquad (3)$$

Radius arm:

$$a_1 = \frac{a}{d} = 1 - \frac{n_1}{3} \qquad (4)$$

Tensile stress:

$$t = \frac{P}{A} \cdot \frac{(e + f - a)}{a} \qquad (5)$$

Compressive stress:

$$c = \frac{2P(e+f)}{n\,b\,a} \qquad (6)$$

Line of thrust from steel:

$$e_1 + f_1 = \frac{e+f}{d} = \frac{a_1\,n_1}{n_1 - 2\,r\,t_1} \qquad (7)$$

Eccentricity about centroid:

$$e_1 = \frac{e}{d} = (e_1 + f_1 - f_1)$$

Tensile stress:

$$\times \frac{b\,d}{P}$$

$$\frac{t\,b\,d}{P} = \frac{t_1}{\frac{n_1}{2} - t_1 r} \qquad (8)$$

Compressive stress:

$$\times \frac{b\,d}{P}$$

$$\frac{c\,b\,d}{P} = \frac{1}{\frac{n_1}{2} - t_1 r} \qquad (9)$$

As before, these have been calculated for various values of r and n and recorded in the following Table III and in Diagrams 8 to 13.

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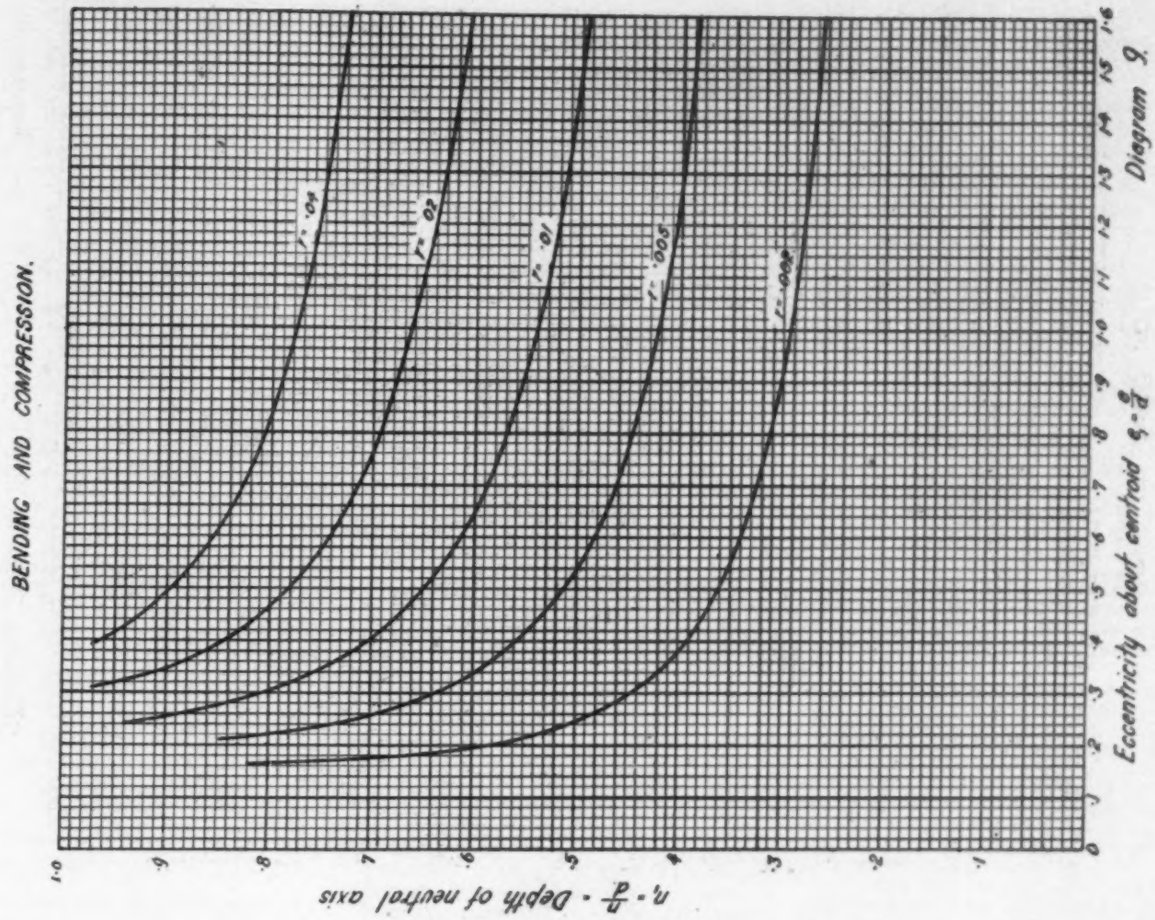
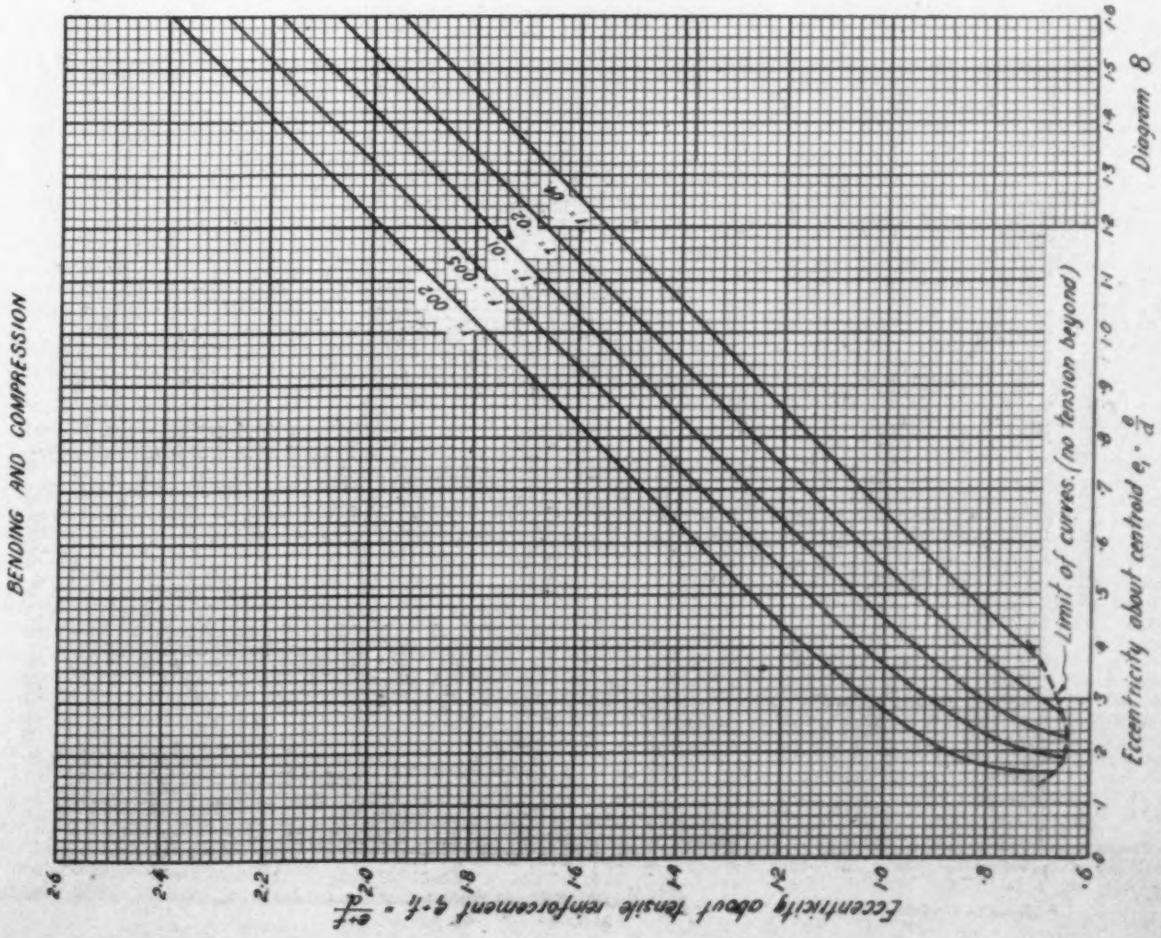
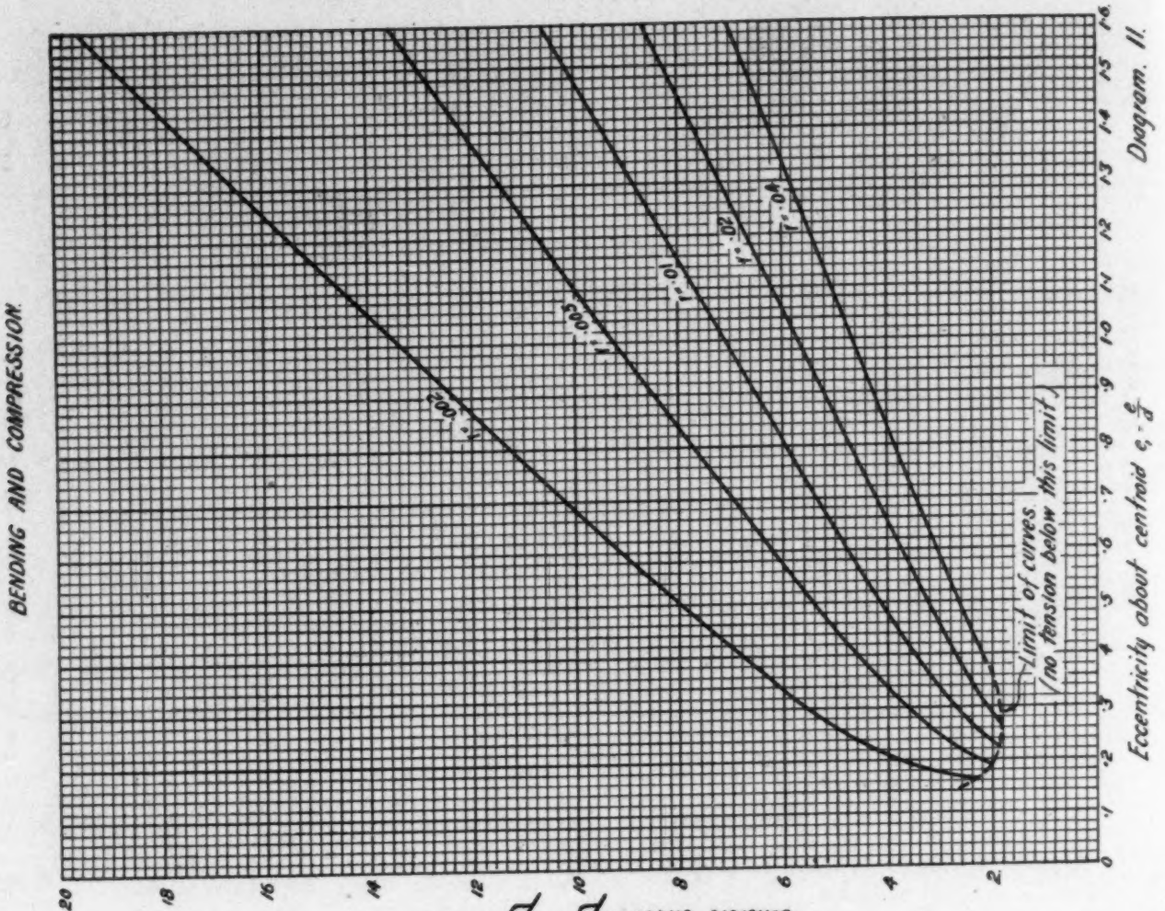

BENDING AND COMPRESSION.
r = .04
r = .02
r = .01
r = .005
r = .002
Eccentricity about centroid e = e/d
Diagram 9
n = c/d - Depth of neutral axis


BENDING AND COMPRESSION
r = .04
r = .02
r = .01
r = .005
r = .002
Limit of curves. (no tension beyond)
Eccentricity about centroid e₁ = e₁/d
Diagram 8
Eccentricity about tensile reinforcement e'/d = e'/d

(See p. 88.)


BENDING AND COMPRESSION.
Diagram. 11.
Concrete stress × bd/P cbd/P
Eccentricity about centroid e = e/d
Limit of curves (no tension below this limit)
p = .04
p = .02
p = .01
p = .005
p = .002

(See p. 88.)

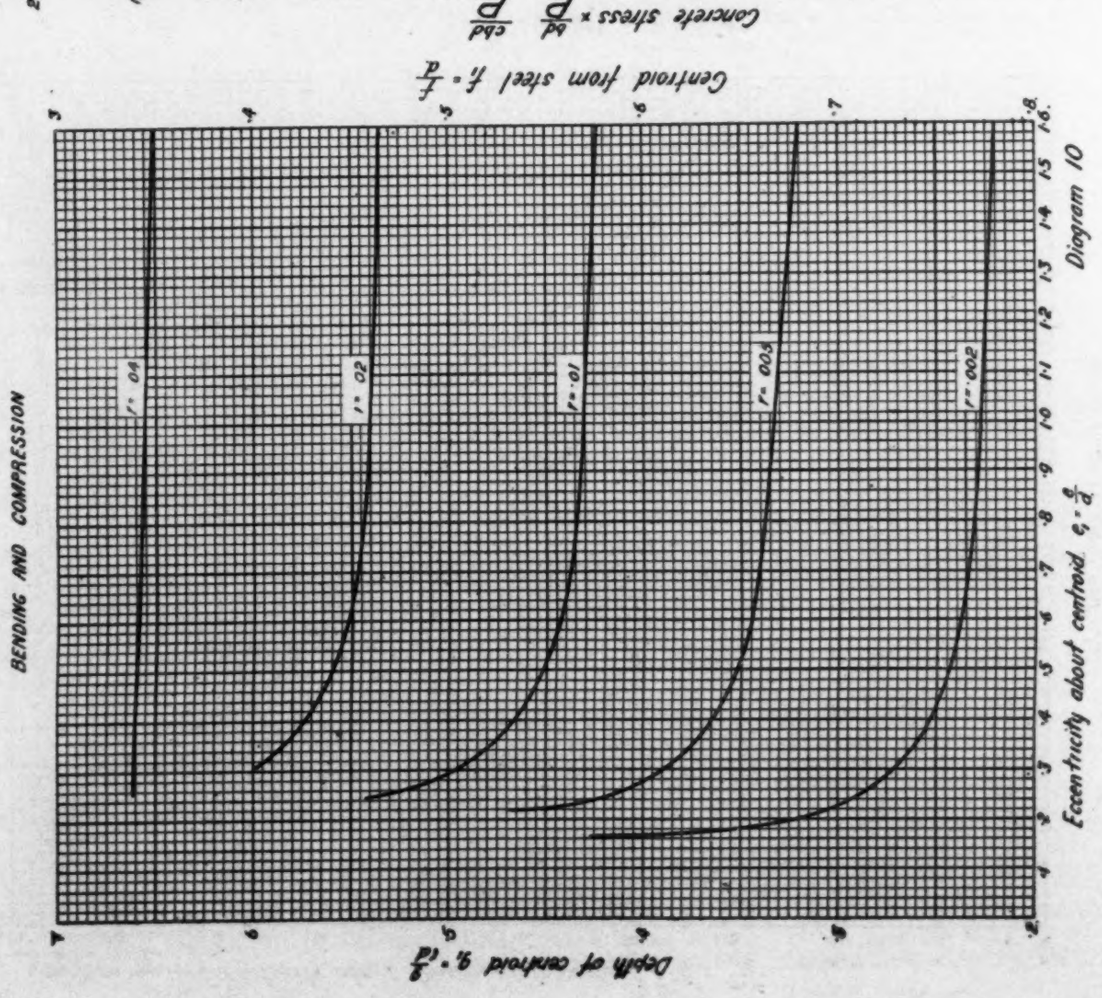

BENDING AND COMPRESSION
Diagram 10
Centroid from steel f = f/d
Eccentricity about centroid e = e/d
Depth of centroid n = n/d
p = .04
p = .02
p = .01
p = .005
p = .002

TABLE III.

BENDING AND COMPRESSION.

Steel Ratio. r	Depth of Neutral Axis. n_1	Radius Arm. a_1	Depth of Centroid g_1	Centroid from Steel. f_1	Eccentr. about Steel. $e_1 + f_1$	Eccentr. about Centroid e_1	Ratio of Stresses. $\frac{t}{c} = t_1$	Steel Stress. $\times \frac{bd}{P}$ $\frac{t\,b\,d}{l}$	Concrete Stress. $\times \frac{bd}{P}$ $\frac{c\,b\,d}{l}$
·002 ..	·8	·7$\dot{3}$	·421	·579	·745	·166	3·75	9·55	2·55
	·6	·8	·33$\dot{3}$	·66$\dot{6}$	·857	·191	10	35·7	3·57
	·4	·8$\dot{6}$	·255	·745	1·120	·375	22·5	145·5	6·46
	·3	·9	·228	·772	1·69	·918	35	437·5	12·5
	·25	·91$\dot{6}$	·217	·783	3·27	2·487	45	1285	28·6
·005 ..	·8	·7$\dot{3}$	·452	·548	·76	·22	3·75	9·85	2·625
	·6	·8	·378	·622	·96	·338	10	40	4
	·5	·83$\dot{3}$	·348	·652	1·188	·536	15	85·7	5·72
	·4	·86$\dot{6}$	·326	·674	1·98	1·306	22·5	257	11·45
·01 ..	·9	·7	·529	·471	·727	·256	1·66$\dot{6}$	3·75	2·31
	·8	·7$\dot{3}$	·495	·505	·809	·304	3·75	10·33	2·76
	·7	·7$\dot{6}$	·465	·535	·94	·405	6·43	22·5	3·5
	·6	·8	·44	·56	1·2	·64	10	50	5
	·5	·83$\dot{3}$	·424	·57$\dot{6}$	2·08$\dot{3}$	1·507	15	150	10
·02 ..	·9	·7	·5875	·4125	·756	·3435	1·66$\dot{6}$	4	2·4
	·8	·7$\dot{3}$	·563$\dot{3}$	·437	·901	·464	3·75	11·54	3·075
	·7	·7$\dot{6}$	·545	·455	1·21	·755	6·43	28·1	4·51
	·6	·8	·53$\dot{3}$	·46$\dot{6}$	2·4	1·93$\dot{3}$	10	100	10
·04 ..	·9	·7	·67	·33	·822	·492	1·66$\dot{6}$	4·35	2·61
	·8	·7$\dot{3}$	·65$\dot{6}$	·34$\dot{3}$	1·17$\dot{3}$	·83	3·75	15	4
	·75	·75	·653	·347	1·607	1·26	5	28·55	5·71

As before, we have divided the safe stresses, $t = 16{,}000$ and $c = 600$, by values of $\frac{tbd}{P}$ and $\frac{cbd}{P}$ respectively, so as to arrive at safe values of $\frac{P}{bd}$ at which these stresses would occur, and by selecting the lower of the two values so obtained have determined the limiting value of $\frac{P}{bd}$ at which *neither* of these safe stresses would be exceeded. These are recorded in Table IV and Diagram 14. As before, the higher (and, therefore, unrequired) value of $\frac{P}{bd}$ is generally not recorded.

An examination of Diagrams 8 to 14 brings out the following points:—

(Diag. 8).—The relationship between $e_1 + f_1$ and e_1 is a linear one, except at quite small eccentricities, but varies by about ·4 d between $r = ·002$ and $r = ·04$. The lower end of these diagrams cease where they run into Case I (no tension).

(Diags. 9 and 10).—The difference between n_1 and g_1 is much less than in the case of bending and tension; and, as in that case, diminishes as e_1 increases and eventually vanishes.

(Diags. 11 and 12).—The tensile and compressive stresses vary almost linearly with e_1 except at quite small eccentricities, much more so than with bending and tension (*cf.* Diagrams 4 and 5).

(Diag. 13).—Clearly all points on curves below the line $t_1 = 26·6$ will be fully stressed in compression before they reach the limiting stress in tension. This evidently applies to steel ratios of ·005 and over (*i.e.*, all cases except very low steel ratios), up to limit of $e_1 = 1·6$.

(Diag. 14).—The usefulness of this in design is obvious (or will be when it has been tried). For the reason stated in the last paragraph, only the lower curve contains a portion where steel stress limits the safe load.

(To be concluded. The other diagrams referred to will be published with the next part.)

City Church in Danger.

The church of St. Margaret, Lothbury, has been pronounced to be unsafe by Mr. Mervyn Macartney, the surveyor of St. Paul's Cathedral. The roof, the tower, and the foundations are condemned, and the verdict has led the Bishop of Stepney to make an urgent appeal for funds necessary to undertake the work of repair. It is estimated that at least £6,000 will be required. The present building was built by Wren in 1690, the former church having been destroyed in the Great Fire.

TABLE IV.

BENDING AND COMPRESSION.

Safe Values of $\frac{P}{bd}$ for limiting stresses of $\frac{c = 600}{t = 16{,}000}$

$r = ·002$			$r = ·005$			$r = ·01$			$r = ·02$			$r = ·04$		
e_1	$t = 16{,}000$	$c = 600$	e_1	$t = 16{,}000$	$c = 600$	e_1	$t = 16{,}000$	$c = 600$	e_1	$t = 16{,}000$	$c = 600$	e_1	$t = 16{,}000$	$c = 600$
·2	[377]	158	·2		261	·225		316	·27		323	·38		286
·3		119												
·4	[101]	88·4	·3		167	·3		222	·3		286	·4		272
·6	60·4	[66]	·4		130·5	·4		172	·4		222	·5		226
·8	42·8		·6		96·8	·6		126	·5		187·5	·6		195
1·0	33·3	[44·8]	·8		77·4	·8		101	·6		162	·8		154
1·2	27·15		1·0		64·9	1·0		84·5	·8		127·5	1·0		128
1·4	22·9		1·2		56·1	1·2		72·5	1·0		105	1·2		110
1·6	19·75		1·4		49·4	1·4		63·5	1·2		89·5	1·4		96
			1·6		44·4	1·6		56·6	1·4		78	1·6		85·7
									1·6		69			

HOUSING AND TOWN-PLANNING NOTES.

State Housing or Private Enterprise.

In the course of their fortnightly record the National Housing and Town-Planning Council state that it has sometimes been suggested that if we had, as a nation, relied on private enterprise instead of adopting a State housing scheme we should have had as a result more houses built for the tenancy of the working classes. Recent inquiries, made over a field comprising many countries, however, place beyond question the fact that private enterprise in regard to the building of small houses for tenancy by the working classes has been and continues to be in a state of suspended animation in every country throughout the world.

Continuing, the memorandum states:—

"Concerning activities in the future of private enterprise there is little short of a consensus of opinion that it will be futile to hope for any great resumption of private enterprise activity in the building of dwellings to be let at rents within the capacity of the average working class family to pay. It may be urged against this that there is already much activity in regard to house building throughout the country. But inquiries show that almost without exception this activity relates to the construction of bungalows and small villas for sale at prices varying from £600 to £1,000.

"From time to time references are made to great reductions in building costs, and prices of £350 per cottage and less are spoken of as if they were normal. But placing aside the fact that the prices thus quoted do not include the cost of land and roads, it should be clearly recognised by the general public that the average cost of building cottages is not represented by the figures to which such wide publicity has been given.

"It is doubtful whether a well-built cottage with roads and land can be produced to-day throughout the greater part of England and Wales for less than £400 to £500 'all in.' If this be so then calculations of cost based on lower figures must in the main be misleading and unreliable. Taking £400 as representing the inclusive cost of building a good cottage, a rental of £40 per year, or 15s. per week—apart from rates—must be reckoned as necessary to pay adequate interest on the capital and for repairs and maintenance."

Clyde Rent Dispute.

A chaotic situation exists on the Clyde and is growing worse with every day's delay, says *The Times*. Open war prevails between landlords and tenants, and the Courts are powerless to intervene. At least twenty thousand householders in Glasgow and tens of thousands more in Paisley, Dumbarton, Clydebank, Renfrew, and other places along the river and throughout the West of Scotland are deliberately withholding their rent. In some of the towns not a single halfpenny of rent has been paid for any working-class dwelling for months. Landlords in such cases have ceased to pay rates, and the machinery of local government is being thrown out of gear.

The tenants pin their faith to a decision of the House of Lords, given in the case Kerr *v.* Bryde on November 3, which vindicated them; the landlords have equal faith in the ability of the Cabinet and Parliament to set aside a judgment which, in their opinion, has clearly frustrated the intention of the Legislature. Until Mr. Bonar Law makes his intentions known it is certain that the position will remain unchanged. A Cabinet Committee is considering the question, and the Prime Minister's statement on the subject has been interpreted as a hint that retrospective legislation will be introduced in the next Session to indemnify the landlords.

Big Clyde Dock Scheme.

We understand that there are prospects of a start being made this year with the big Renfrew dock scheme contemplated by the Clyde Trustees.

THE BUILDING TRADE.

THE RATING OF FLATS.

A CORRESPONDENT has again written to us complaining of the rating of flats (see p. 77). So far as we understand his letter he owns two leasehold houses which, in 1914, were rated at £55, but he does not directly give us the 1914 rental. One of these houses in 1920 he converted into three self-contained flats, which, in the first place, were each rated at £72, but on appeal the assessment was reduced to £70. Each flat was let for £130 "inclusive," which we understand to mean inclusive of rates, which gives an actual rental of £60 per flat. The conversion cost £1,000 and our correspondent says that he is thus only allowed 5 per cent. on his outlay and under present rating conditions he will not undertake any further conversions into flats. He does not give sufficient information to show how he arrives at this figure of 5 per cent., but he complains that he has not been given the benefit of section 12 subsection (9) of the Rent Act by the rating authorities.

The meaning of that subsection is so obscure that no satisfactory explanation of its proper interpretation has ever been forthcoming. The subsection commences by excepting from the provisions of the Rent Act dwelling-houses erected after or in course of erection on April 2, 1919, and dwelling-houses since that date or at that date being reconstructed by way of conversion into two or more separate and self-contained flats and then proceeds, "but for the purpose of any enactment relating to rating the gross estimated rental or gross value of *any such house* to which this Act would have applied if it had been erected or so reconstructed before August 3, 1914, and let at that date shall not exceed (*a*) if the house forms part of a housing scheme to which section 7 of the Housing, Town-Planning Act, &c., 1919, applies, the rent (exclusive of rates) charged by the local authority in respect of that house, and (*b*) in any other case the rent (exclusive of rates) which would have been charged by the local authority in respect of a similar house forming part of such a scheme as aforesaid." This reference to section 7 of the Housing Act is one of the peculiar features of this extraordinary subsection, for section 7 is headed "Financial Provisions," and the side note is "Power to recoup losses," and no layman can with certainty decide to what schemes it refers.

Then there is a further difficulty as subsection (9) of section 12 of the Rent Act speaks of the gross estimated rental or gross value of any "*such house*" "to which this Act would have applied if it had been erected or so reconstructed before August 3, 1914." Prima facie "such house" might mean the whole house in course of construction, but as section 12 subsection (2) says the Act is to apply to "a house or part of a house let as a separate dwelling" it may be assumed that subsection (9) applies to flats and self-contained tenements.

However this may be, it is difficult to see how the assessment of our correspondent's converted house can be justified. The house before conversion was rated as a whole at £55, but after conversion the three flats taken together are rated at £210—£70 for each flat. But if the flats are regarded separately, then the assessment appears to be £70 on a rental of £60, and quite apart from any housing scheme the assessment would appear excessive.

The Government is anxious to foster housing and it would appear, that being the case, one of the first steps to be taken should be, whilst the Committee on the Rent Act is sitting, to inquire into this question of rating new and converted houses and to have the intention of the legislature expressed in terms that can be understood both by those affected and by the rating authorities. At present subsection (9) is entirely incomprehensible and no real opinion can be given upon its effect; indeed it had better have been written in Chinese because then anyone knowing Chinese could have translated it, whereas this draughtsman's jargon is understood by no one.

THE BUILDING UNIT IN THE RESIDENTIAL PART OF CITIES.

We have received the following letter from Mr. S. Cameron, Hornsey:—

SIR,—In reply to Mr. Eagar, my impression of "Garden cities" is that they are too straggling. I do not care for those sparsely-covered areas which are neither town nor country. I like better the compactness of Bath. I like the bustle of the cities, the crowds, but not the overcrowding. In garden cities neighbours are so far apart; it is quite a long walk along a road of twenty houses. Mr. Eagar speaks of Oxford and Letchworth. I know them both. I know which I prefer. Garden cities are delightful to read about, and in uninteresting country there may be no serious objection to them. I am acquainted with the "close" of the garden city, but I take this to be the exception rather than the rule; it is not there as in the city proper one of the cells essential to the structural growth of the city.

As, with the knowledge now in our possession, there is no valid excuse why the new towns and cities that are built should not be comparatively smokeless, I think the objection to cities, with their superior sanitation, will have lost much of its cogency.

WANDSWORTH TECHNICAL INSTITUTE.

The Old Students' Committee of the Wandsworth Technical Institute write as follows:—

SIR,—In your advertisement columns will be found a notice of a proposed presentation to Mr. Geo. Arnall, F.S.I., M.R.San.I., F.I.S.E., who has now been lecturing on architecture, surveying, building, and sanitation for the past twenty-one years. We, the undersigned Committee of Old Students, consider such an event should be suitably recognised, and at a social entertainment, to be held on January 27, at the Institute, a small presentation will be made on behalf of the Committee by Mr. B. S. Gott, M.A., Secretary to the Middlesex Education Committee. The Principal of the Institute, Mr. D. N. Griffiths, B.Sc., has kindly permitted us the use of the Institute, and has also promised to be present, and it is hoped to have the company of other influential gentlemen. Tickets for the entertainment, price 1s. each, can be obtained from the Hon. Secretary, to whom also any contribution to the presentation fund should be sent, at the Institute. We would feel greatly obliged if you could spare room to insert this letter as we know that a number of old students, many of whom hold important posts, would be only too willing to join us.

HARRY FEW, F.S.I.
W. G. YOUNG, F.S.I.
B. E. LUCAS
S. T. SAUNDERS
S. R. SULSTON
} Old Students' Committee.

H. A. MACKMIN, P.A.S.I., Hon. Secretary.

THE BUILDING TRADES' PARLIAMENT

Mr. H. Bryant Newbold, Editorial and Organising Secretary of the National Federation of Building Trades Employers, writes:—

SIR,—As many people are interested just now in the above subject, and as there have been letters recently appearing, both in the technical and daily Press, written by persons who evidently are not fully informed, I think it would serve a useful purpose to give a detailed account of how the Foster Report killed the Building Trades' Parliament. Therefore, I propose to forward you a short article on this subject, in the hope that you will be able to include it in your columns.

With reference to Mr. Yerbury's letter in your last issue, it is only fair to state that I did not say that it was "arrant nonsense, because the Foster Committee Report killed the Building Trades' Parliament," but that it was arrant nonsense to talk of reviving the Building Trades' Parliament by means of that very thing which killed it, *viz.*, the Foster Committee Report.

Should you be able to publish the article I suggest, no doubt Mr. Yerbury, if he does me the honour to read it, will agree that there is more in the Foster Report than would be apparent at first sight to anyone who was not a member of the Committee, nor in possession of all the facts. H. BRYANT NEWBOLD.

[We hope to publish the article referred to in our next issue.—ED.]

TOWARDS PEACE IN INDUSTRY.

UNDER the above heading Lord Milner has commenced a series of articles in *The Observer* on industrial questions which will be read with interest. It would be premature to express any opinion on the articles until they have all appeared, but there is one point in the first article which has just been published to which we venture to draw attention.

Lord Milner says that the advocates of labour usually focus their criticism of existing conditions on the distribution of wealth, which is an attack the most easily met, but that the real gravamen of the charge against our present industrial system is that it mismanages, misdirects, and therefore limits, production itself, and that this charge the defenders of capitalism will find it most difficult to meet, and yet day after day they confine themselves to dinning it into our ears that there is nothing wrong with the internal conditions of trade and industry, but too much Government interference. Lord Milner then says that it is rather difficult to make out against what these constant complaints of interference with the freedom of industry are really directed, as the people who make them appear to be beating the air, for all controls, with the exception of the Safeguarding of Industries Act, have gone, and there is no more interference with industry than there was before the war, and we are back in the old conditions.

Now, as regards absolute control, surely this statement is hardly correct, for we can instance one war measure at least that is still in full force—the Restriction of Rent Act—which is fettering the owners of house property and seriously affecting the building trade. But, quite apart from absolute war measures of control, may not the advocates of capitalism be referring to other matters—minimum wages, maximum hours, early closing, and that network of legislative interference with industry which marked the pre-war period which, in comparison with present times, must be regarded as a period of prosperity?

We recognise as a nation that the war has changed the whole world, but we cling to methods that marked a time of peace. The world has lost its capital and a new level of the standard of living has to be found, and all classes must set themselves to save and make capital. Increased production is essential, and pre-war peace methods are as inappropriate to present conditions as would be peace methods in a time of actual war. In the war, legislative restrictions were relaxed, the trade unions consented to waive their restrictive rules, and the whole nation won to peace. But that is only to peace from war, not to a time of rest and plenty; that ultimate goal can only be reached by further exertion, by sacrifice and energy, by good-will amongst classes, and lastly, by the abolition of legislative restrictions on industry which are inappropriate to the remaking of the world of industry in face of unparalleled foreign competition and with the burden of war debt.

LAND CONVEYANCE AND BUILDING PROSPECTS.

AT a meeting of the Auctioneers' and Estate Agents' Institute, held on Thursday last week, Mr. T. B. Bennett, F.R.I.B.A., read a paper on "Land Conveyance and Building Prospects."

In the course of his paper, Mr. Bennett said in connection with the development of housing it appeared to him that the two main systems of disposing of land, namely (1) freehold, and (2) leasehold, had as prospective purchasers, for freehold, the public utility society, local authorities and private owners, and in the case of leasehold housing, the building speculator and the private owners. Pre-war the bulk of the houses erected in this country were the result of the work of the speculative builder, to whom they owed a certain debt of gratitude, but they could never have obtained half the benefit they had if his activities had not been kept in check by the leasehold system and the control exercised under it by the ground landlords and their surveyors. They lived in a time of experiment and transition; an increasing number of people desired to possess a house of their own, and were trying to solve the problem of obtaining it. Their difficulties were increased enormously at the present time by questions of finance, and housing resolved itself, not merely into a matter of building at a reasonable price, but of finding the capital wherewith to build. There was, therefore, the need for some system of deferred payment in connection with building and the purchase of land. For that reason the housing system of the public utility society had come into existence. Such societies had advanced money to purchase land, and had allowed the tenant to repay the cost of land and building combined as a complete entity. If the system of providing houses for a large number of purchasers of small means were to be extended, then an extensive system of hire-purchase for land appeared to be a necessity.

Local authorities had endeavoured to step into the breach by buying land and building houses to let, and as a result had provided a certain number of houses, in some cases well designed and well built, but with disastrous financial consequences. They were now realising that the speculative builder was right when he built to sell, and forced every purchaser to become his own property manager, as, where capital existed at all, this system was more economical. Quite apart from the system under which it was carried out, he was convinced that all building on an extensive scale by public authorities was financially impossible. The private owner with sufficient means to purchase the freehold was, unquestionably, the most desirable prospective building owner and of the greatest use to the public at large.

The leasehold system, pure and simple, was a transaction which had appealed in the past primarily to the speculative builder. In the light of public and political feeling at the present time, he thought speculative building would have an immense chance of success if it were carried out by active co-operation between land agents, architects and builders, upon an economic system of collaboration which would provide houses with the maximum standard of comfort, artistic appearance, and economy of cost. He regarded the hire-purchase of land as a contributory factor, and one which might have been more extensively applied than it had been in the past. The essential factors for success were a thoroughly satisfactory lay-out for the land and sound design for the houses, while the services of the estate agent were required with regard to the selection of the site and the creation of satisfactory terms of conveyance.

Finally, there was the question of leasehold with respect to the private owner, which must remain an avenue for the disposal of building sites, for many reasons. Although leasehold was open to the objections indicated above at the time at which it was granted, it had certain corresponding advantages when it fell due; advantages which were more evident to the independent observer than to the leaseholder.

It was a common statement to say that there was at the present moment so much land available for development that the prospective purchaser could choose his own site and his own system of purchase, but he suggested that that choice was only open to the speculative builder, who was concerned with obtaining a site which was ripe for development, and was not concerned particularly with its exact locality. In other cases considerations of personal interest came into operation, and the building owner in practice had not the free choice of site which existed in theory.

He would like to emphasise the public advantage which would arise from the co-operation of the landowner with the speculative builder in the creation of a joint scheme for the development of houses, provided that each partner to the transaction was prepared to make a fair profit and take a fair portion of the responsibility for possible losses. Again, any such scheme was impossible without the active participation of responsible professional men, who were independent of the financial profit or loss on the transaction except in so far as they were vitally concerned by reason of their obligations to their respective clients.

In the case of land that had been previously built upon, it was a matter of rebuilding, either with a view to maintaining or increasing the earning capacity of the buildings, or to restoring unsatisfactory, overcrowded, and dilapidated areas into areas conforming to modern ideas and standards of living. Here the landowner was a very prominent figure, inasmuch as his property was in a position known to all, clearly defined, and with advantages or disadvantages which were not all of his making. If his land were in a highly desirable position he could sell and impose practically any restrictive covenants he liked, and in many cases he not unnaturally made the most of that (from his point of view) very desirable situation. Yet in many instances the landowner acted in a reasonable and equitable manner to the whole of the prospective builders or building owners who wished to re-build on his land. Occasionally those landowners co-operated with the building owners on a system of deferred payment, or by some other method which encouraged development and made it possible for the builder to proceed and to succeed financially.

He thought he was right in saying that the procedure adopted by the L.C.C. in the development of Kingsway was a very marked instance of the way in which an alteration of policy affected building development. In the first place the Council demanded high rents and extensive restrictions which practically prohibited building. Subsequently it went to the other extreme and gave most advantageous terms to prospective builders, and that had resulted in what might be regarded as fairly rapid development, with consequent advantage not only to the Council as freeholders, but to the community at large. On the other hand, there were still many instances in which public authorities, such as the Office of Woods and Forests and the Ecclesiastical Commissioners, had demanded enormous rents and imposed onerous restrictions under the false impression that they were thereby serving the public interest. They in the professions concerned were aware that a great deal of dissatisfaction had been caused, for example, in the granting of the Regent-street leases. He hesitated to refer to them as strongly as he would like, because while, on the one hand, they had made it extremely difficult for owners to build and would in the future cause the public to pay very high prices for their goods to meet the ground rents demanded, on the other hand, they had seen middlemen capitalists and speculators exercising an entirely undesirable influence and actually obtaining very large profits for which they did little or nothing. The capitalist and financial builder who ventured large sums, took risks, and perhaps in the end drew enormous profits from their financial operation, were in a totally different category and were to be encouraged in every way. It was their business acumen, foresight, intelligence, and ability which brought them legitimate advantage and enabled others to benefit by the use of their capital and obtain advantage from the activities which were rendered possible by the existence of that capital. If they could assist such men—and they could assist them substantially—they must do so to the utmost extent in their power.

THE SMOKE ABATEMENT BILL.

IN some editorial comments in a recent number of the *Fuel Economy Review*, the Federation of British Industries expresses its opinion on the Smoke Abatement Bill. Vested interests appear to be never on the side of measures which put them to inconvenience, and we are, therefore, not astonished that the Federation disapproves of the Bill. The principal arguments cited against it are as follows:—

1. That a manufacturer may be liable to prosecution because he is being supplied with fuel which may be non-suitable, but over which he may have no choice.

2. That Government factories are exempted.

3. That the Bill does not cover the nuisance from domestic smoke.

In respect to the first of these objections, one does not see why the public should have to suffer because a particular manufacturer uses "non-suitable" fuels, or, in plainer words, because his factory is inefficient or unsuitably situated. It may, with some classes of fuel, be difficult to get the happily balanced conditions that obviate smoke entirely, but a vast improvement can easily be made upon existing practice.

Objections two and three prove only that the Bill is not sufficiently comprehensive, and cannot reasonably be used as arguments for its rejection. The article under discussion gives the impression that the emission of smoke and dirt is the manufacturer's concern and nobody else's, and that he will cease to produce smoke when it suits him to do so. We have every sympathy with the manufacturer, but we must remind him that such an attitude is anti-social and out of date, and that the trouble has arisen mainly because of his utter disregard of the public in the past. It would surely be wisdom on his part frankly to recognise the evil and seriously to co-operate in remedying it, rather than to oppose progress and tell us calmly that "as research and development proceed the smoke nuisance will abate."

Manufacturers are entering upon a difficult time and their success will, in large measure, depend upon the goodwill and co-operation of the country as a whole; but if they attempt to ride rough-shod over the wishes of the community and so place their own interests before the common good they will be doing themselves irreparable injury in alienating the sympathy of progressive minds, and it will be highly unfortunate if political pressure is applied from this quarter in an attempt to wreck the Bill.

The *personnel* of the Smoke Abatement Committee was such as to command respect; its work was thoroughly carried out; and the recommendations of the Committee are generally accepted. Certain amendments in the Bill may be found desirable; but we trust that they will not be such as to whittle down the public protection which exists in the clauses as they now stand.

ELECTRIC LIFTS.

MR. H. MARRYAT, M.I.E.E., M.I.Mech.E., in the course of a paper on "Electric Lifts," read before the Association of Supervising Electricians, on Tuesday, said they had in this country, up to a point, followed American practice, but the freedom from restrictions which they enjoyed allowed of departure, and there were those who felt that the time had come when they should go ahead in developing a purely British lift, one in which high speed could be attained even with short travel, with rapid and perfectly smooth acceleration under all conditions of load; equally rapid and smooth stopping; accurate floor levelling; and the general comfort and perfection of detail so dear to the heart of the Britisher. Such a lift might have to give points with regard to first cost, but those would be comfortably regained in the reduction of maintenance charges and in general satisfaction.

With regard to the choice between drum and traction drive, that was a question that had now nearly answered itself by the practical survival of the traction sheave. When electric lifts were first introduced into this country in the early 'nineties, the drum machine was used; his firm took exception to the arrangement as being dangerous, and pinned its faith to the traction sheave. A contest of opinions followed for a long period, and it was only lately, comparatively, that the traction sheave method of drive had completely come into its own. It was safer than the drum because if by any chance all other safety devices fail and the car or the counterweight run into the dead stops, then with the traction sheave drive the rope would be so slack that the sheave would continue to run inside the ropes and no catastrophe occur; whereas, with the drum form of drive in the event of the various safety devices failing and the machine continuing to run there must ultimately come a time when the ropes would be ripped from their attachment to the cage or the counterweight. In either case the cage or the counterweight would fall to the bottom of the well. Again, with the traction sheave method of driving there was no difficulty in arranging for any number of ropes to be connected up as it were in parallel from the cage over the sheave to the counterweight: whereas with the drum drive the capacity of the drum itself limited the number of ropes which could be so employed, and it was seldom found practicable to use more than two. Another argument which pointed to the best position for the engine being at the top of the well, *i.e.*, that if the engine was removed from that position to any other part of the building, instead of removing weight from the top girders as would perhaps at first glance appear, the strain upon those girders was actually in almost every instance very substantially increased.

In the design of a building it was usual for the architect to give the question of a staircase—its dimensions, position, and construction—primary consideration, and he took care to see that it was designed in due proportion to the requirements of the building. The same consideration should surely hold good with regard to the electric lift; indeed, inasmuch as modern buildings were usually of greater dimensions than those of past generations, and were intended to house a greater number of people on the upper floors, the consideration of a lift should occupy an even more important space in the design of the building than did the staircase previously. In fact, nothing of the sort happened until the lift makers came upon the scene, usually when the building was well advanced and it was too late to make any substantial alteration to the general plan. The lift maker was constrained to adapt his machinery to the special lay-out of the building and so was unable to give of his best either in delivery or first cost. It would often happen that he was unable to arrange the machine so as to give the best rope drive. The result of that would be a further increase in first cost and a very big increase in the continuing maintenance cost. If again, as too often happened, sufficient overtravel could be obtained, owing to the existence of important footings and sometimes drains, below the lift shaft, then the question of the speed of the lift might be affected, so further reducing the efficiency of the machine after installation. The size and shape of the car was usually fixed by the architect, frequently without regard to the essential feature of a wide opening for a busy lift in order that it might be quickly filled and emptied. Again, it sometimes happened, although not so often now as formerly, that the lifts were placed in a position altogether subservient to the general plan, with the result that they were not properly lit, time was lost in reaching and leaving them, whilst a large and spacious staircase stood practically unused in a more important part of the building.

But possibly the greatest of the architects' sins of omission he had not yet touched upon, because in that respect lift makers were themselves, he believed, equally at fault. He referred to the lack of any scientific basis for calculation of the capacity of the necessary lift equipment required for a particular building. The problem was a difficult one, and one which he believed it was quite impossible for the architect to solve alone and without the assistance of a lift engineer of experience. The best basis was the rentable floor space of the building above the ground floor. The use to which each floor of the building was to be put must then be taken into account. That information, together with a plan showing the positions of the main entrances and corridors, and with tables of statistical results taken from a number of similar buildings, would enable the engineer and the architect together to decide what would be a suitable and efficient lift equipment for the building in question. He considered it essential to the proper development of electric lift service in this country for the architect to call into consultation the lift engineer—either the lift maker or a consultant—before the completion of the building plan, and, in fact, in the very earliest stages of any proposed building scheme of importance.

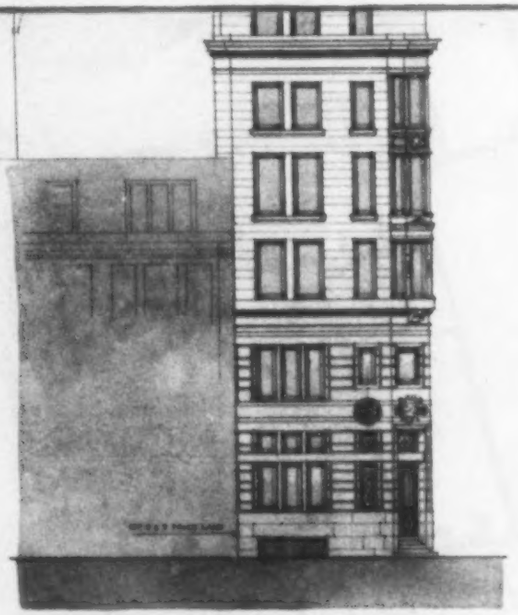
Referring to the characteristics of direct current motors suitable for lift work, he said such a motor might be intermittently rated for a capacity of 15 minutes to 30 minutes per hour continuous running according to the nature of the work it was to be put to. A lift which was required for a busy service (even though only occasionally) should be equipped with a motor of the heavier rating: the commutator and brush gear must be of ample proportions to withstand the heavy starting currents and continual starting and reversing. The machine must, of course, be reversible with fixed brush position and special attention must be given to the method of finishing the armature coils to the commutator. Quiet running was usually an essential. Direct current lift motors were either single speed or variable speed, the speed variation being obtained by means of shunt field control. Single speed lift motors were usually compound wound, the compounding consisting of from 10 to 20 per cent. series turn, which winding was cut out when the lift acquired full speed. Variable speed lift motors usually had a speed range of 2 to 1. If that type of motor was used the lift could be run at full speed practically as efficiently as at high speed. In transferring from high to full speed the motor acted as a generator and returned current to the line. Such a return must not be expected, however, to amount to more than 3 or 4 per cent. of the total current consumption of the lift.

In deciding upon the speed of a lift motor the designer was faced with the necessity of compromise which forced itself on the lift engineer at almost every turn. A slow speed motor with heavy flywheel effect in the rotating part undoubtedly smoothed both the acceleration at starting and the retardation at stopping, and so increased the comfort of the passengers. On the other hand, as the cost of energy consumption in an electric lift was in proportion to the number of starts and stops, on any busy lift serving a number of floors, it was important to reduce the inertia of the moving part of the motor as much as possible. Motor speeds of from 800 to 1,200 r.p.m. were now generally accepted as being the most satisfactory for passenger lift service in London, whilst speeds in some cases up to 1,800 r.p.m. were employed with a measure of success. In deciding the capacity of a motor for any given service the overall efficiency between the load and the line must be known or estimated. The motor must be capable of starting the lift with its maximum load from rest. The h.p. of the motor required might be calculated by multiplying the out of balance load in lbs. by the speed in feet per minute and dividing by 33,000 and the efficiency. That efficiency would vary from 30 to 60 per cent. and in the majority of the passenger and goods lifts in London might be estimated round about 40 per cent.

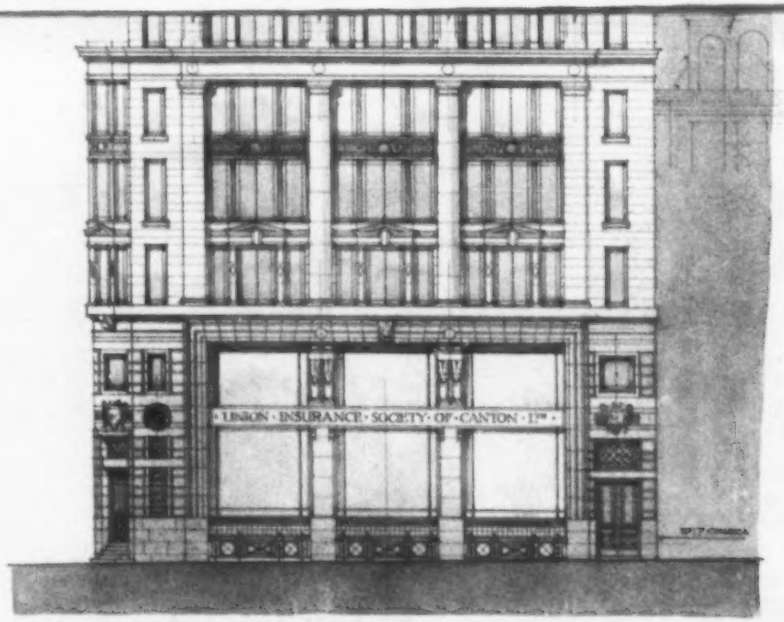
With regard to the American practice of sometimes using a gearless lifting engine, that was to say, one in which the drum or traction sheave was coupled direct to the motor shaft without the intervention of any gear, he said the reeving of the rope might, or might not, be so arranged as to give a 2 to 1 lifting speed upon the car. In any case, a motor designed for that purpose must be of very slow speed—say 75 r.p.m., and the lifting speed must even then be higher than was practicable in London buildings. That type of engine was coming into increasing use in America, but it was difficult to see its advantages except for express lift service, where a lift may run from the ground to the fifteenth or twentieth floor without a stop, because essentially where many stops were made that type of engine had a lower overall efficiency than the usual geared type with which they were acquainted.

The almost universal practice here for passenger and goods service was to couple the motor direct to a worm and wheel gear. In deciding upon the motor speed and gear ratio of any particular lift engine, it was important to bear in mind that although worm gearing lent itself to very large gear ratio, yet the efficiency of the gearing fell off very rapidly as the gear ratio increased. That was due to the use of low gear angles which, under such circumstances, could not be avoided. Worm gearing for modern lift work was always enclosed in a cast iron case which formed an oil bath, and was provided with suitable thrust bearings. There were two principal types of arrangement: one in which the worm was above the wheel and the other in which those positions were reversed. After much experience his firm decided to pin its faith to the former and more expensive pattern, *i.e.*, the arrangement in which the worm was above the wheel. The reason for that was that it provided an altogether more solid construction. The important consideration was the lowering of the centre of gravity achieved by placing the heaviest parts of the whole lifting engine directly on the bedplate instead of at the considerable elevation above it necessitated when the worm wheel and main driving shaft were situated above the worm and motor centre. The motor was coupled to the worm gear by means of a specially constructed coupling forming a drum upon which the electro-magnetic brake could operate. That

: Nos 78, 79 & 80, CORNHILL E.C.3. :



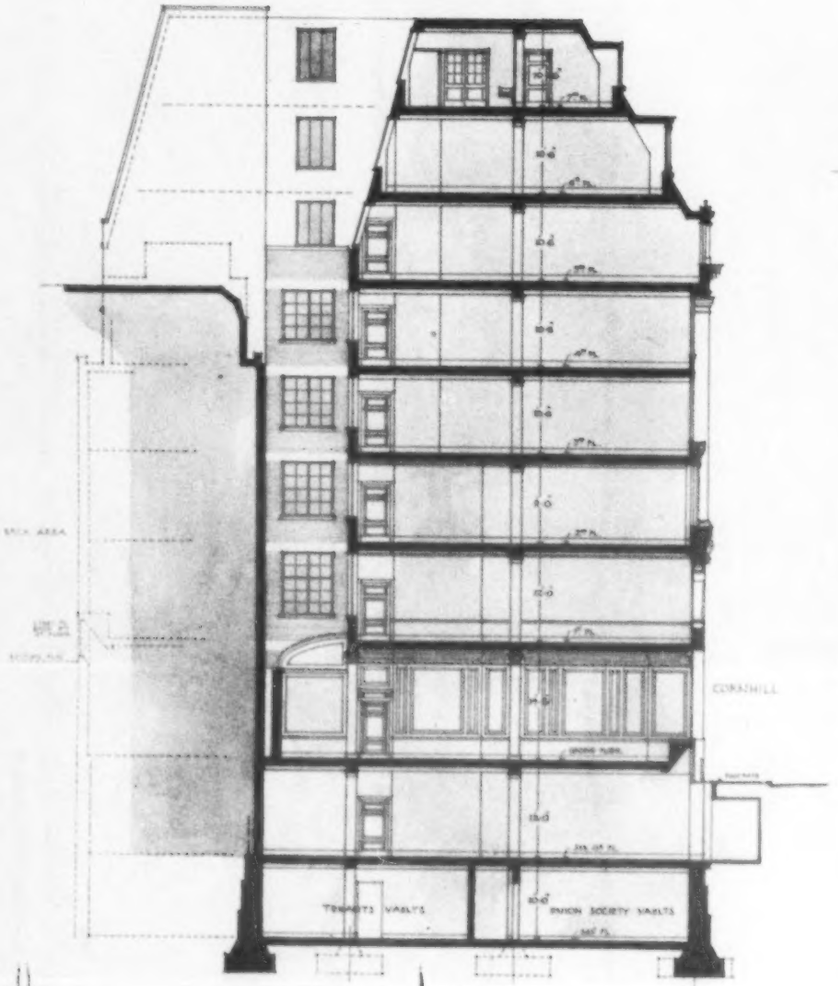
· ELEVATION TO FINCH LANE ·



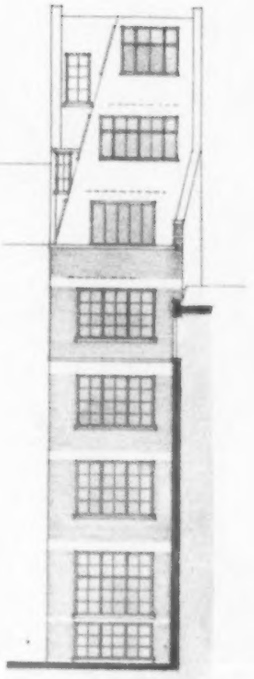
· ELEVATION TO CORNHILL ·

NOS. 78, 79 & 80, CORNHILL, E.C. MESSRS. GUNTON & GUNTON, F. & A.R.I.B.A., ARCHITECTS.

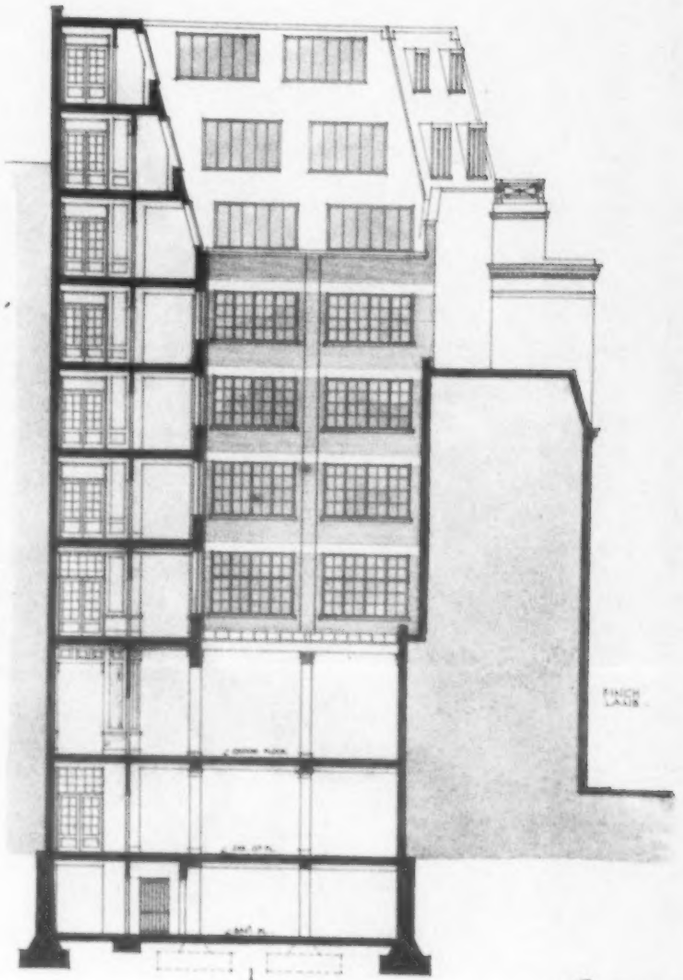
: Nos 78, 79 & 80, CORNHILL, E.C.3. :



SECTION A.A.



ELEVATION TO BACK AREA.

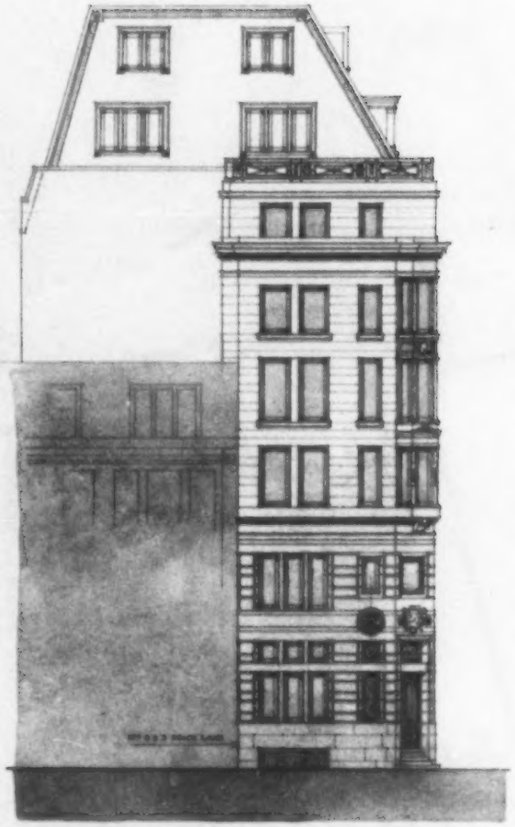


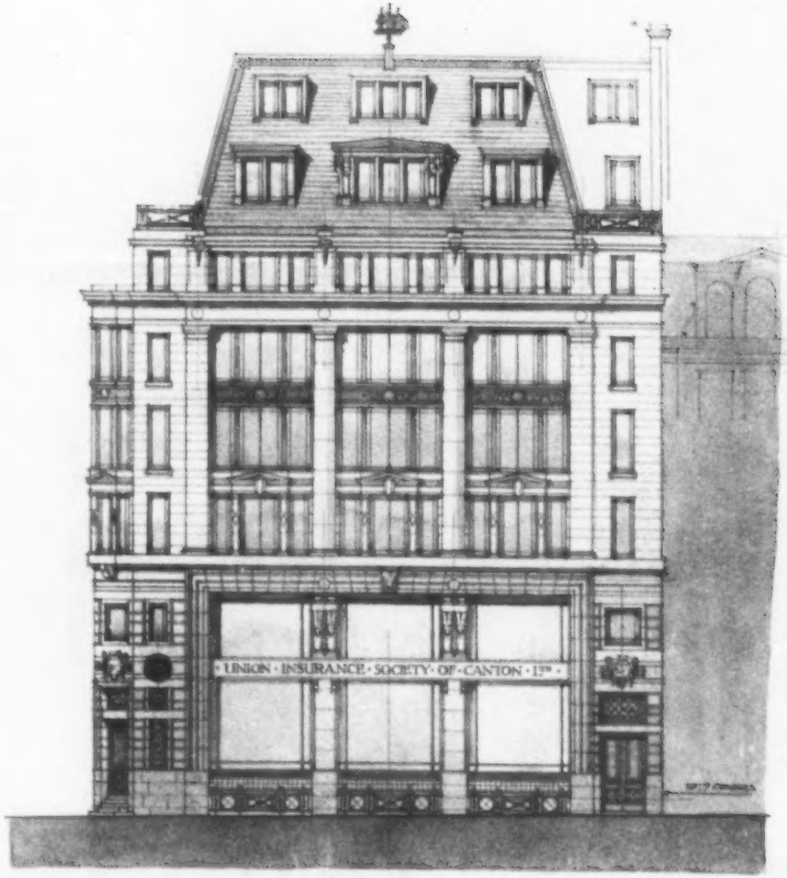
SECTION B.B.

THE BUILDER, JANUARY

SECTION A.A

SECTION B.B





ELEVATION TO FINCH LANE

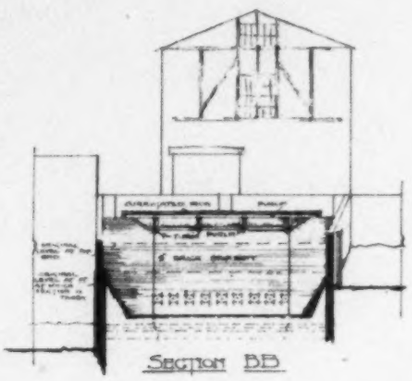
ELEVATION TO CORNHILL

Nos. 78, 79 & 80, CORNHILL, E.C. Messrs. Gunton & Gunton, F. & A.R.I.B.A., Architects.

JANUARY 12, 1923.

The Kings Head, Ampthill, Beds.

Conversion to Territorial H'qrs.



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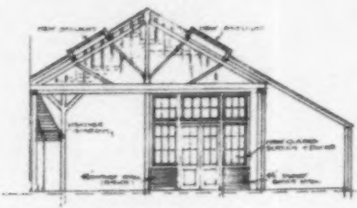

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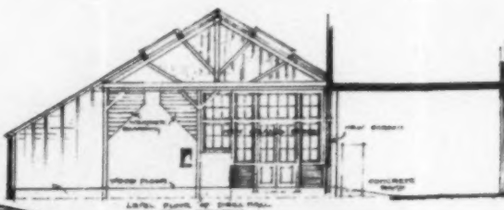

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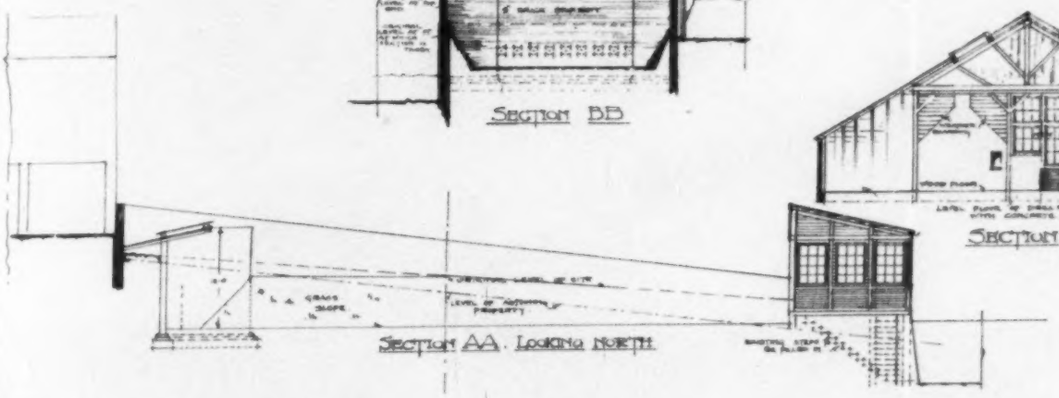

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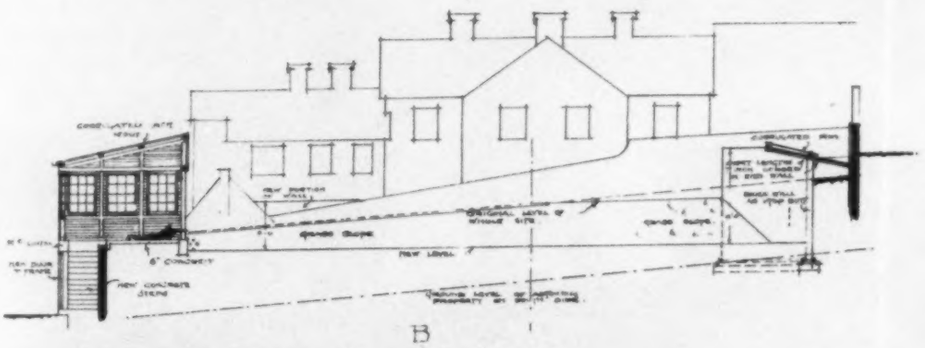
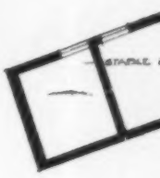
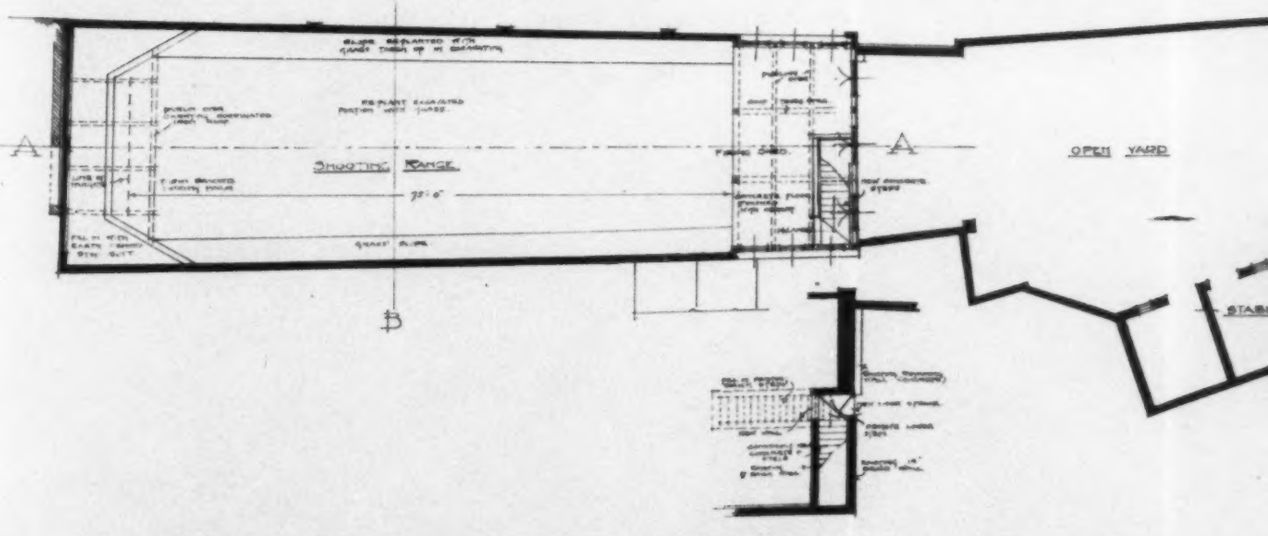
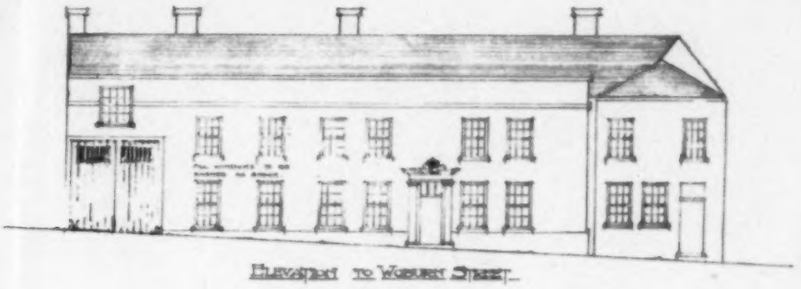




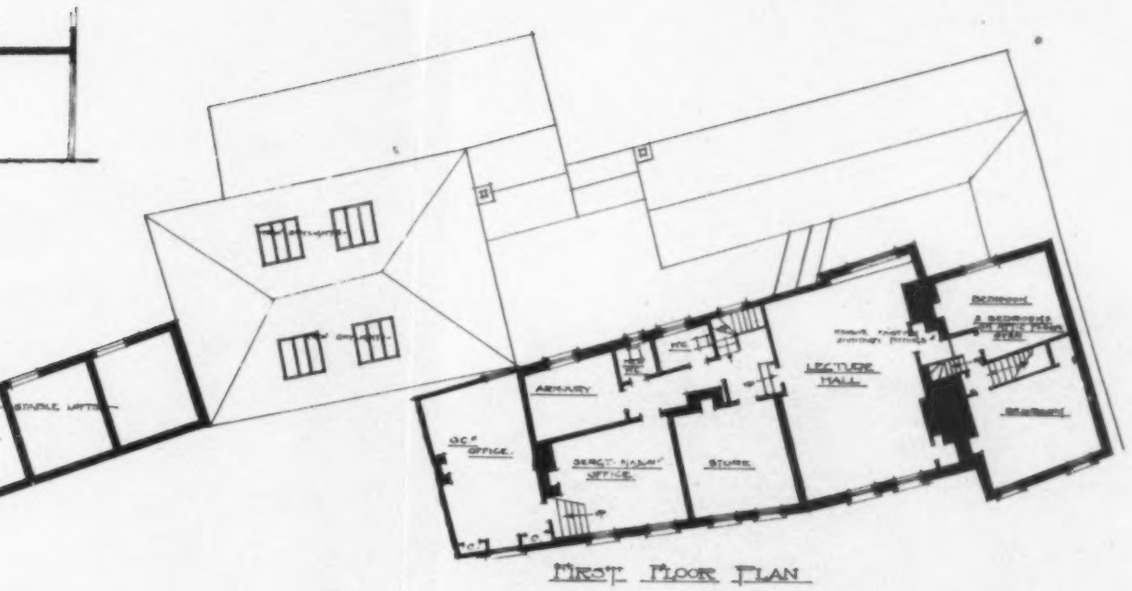


Plan at Yard Level

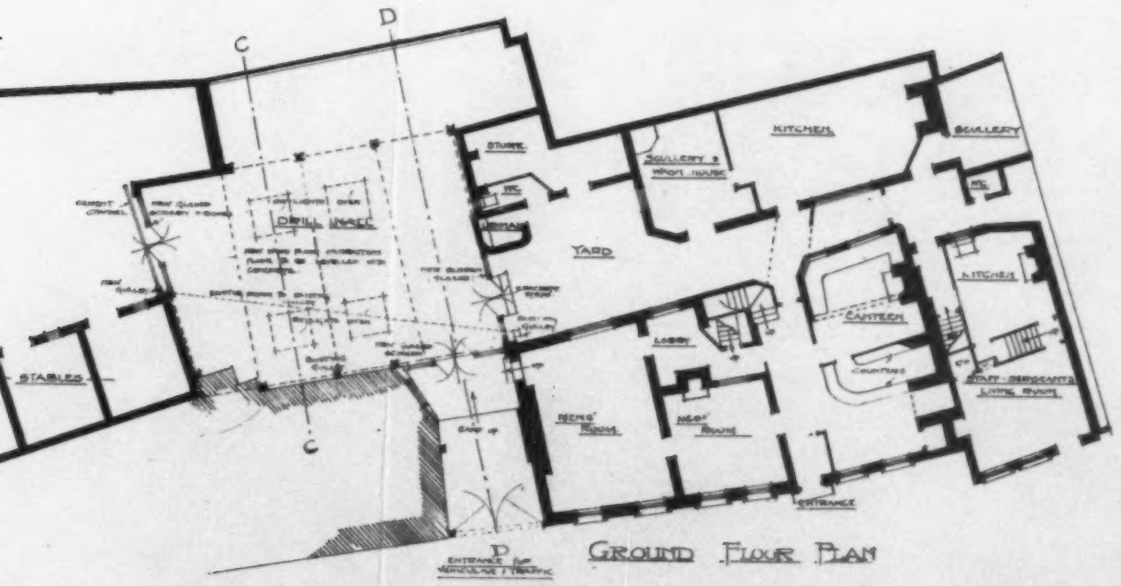
SCALE 1 INCH - 8 FEET



ELEVATION TO WOBURN STREET



1ST FLOOR PLAN



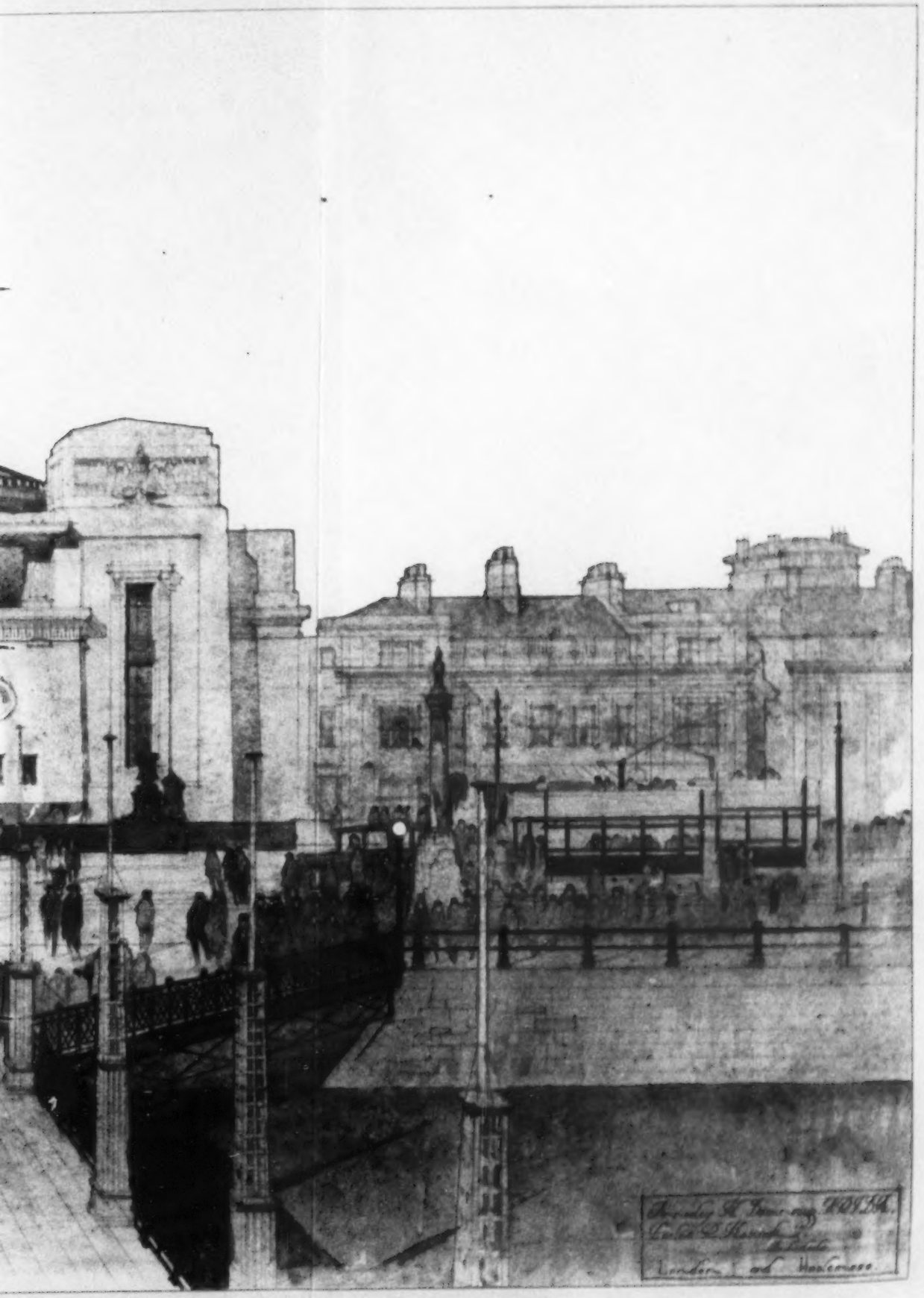
GROUND FLOOR PLAN

RICHARDSON & GILL, FRIBA
ARCHITECTS,
41 RUSSELL SQ, WC
20. 5. 22

R.A. EXHIBITION.

HASTINGS MUSIC PAVILION. COMP

BY MESSRS. A. H. BROWNRIGG, F.R.I.B.A.,



COMPETITION DESIGN

.R.I.B.A., & L. R. HISCOCK.

brake, which was normally held on by means of a powerful spring, was released by a solenoid connected directly across the line at the same time that the current was applied to start the motor. The function of the brake was to retard the lift and bring it to rest when stopping, and to hold the whole of the gearing rigidly whilst the lift was stopped.

They had now added a hand release to the brakes they supplied. The purpose of that was to enable the brake to be released by hand in case it was necessary on account of the failure of current supply, to wind the lift to floor level by hand. In addition to the electro-magnetic brake it was now usual to equip high speed lifts with a dynamic braking device. That consisted simply of short circuiting the armature of the direct current motor through a resistance while in their controller the shunt field was disconnected from the line and energised by back E.M.F.

If often happened that the lift maker was quite unable to predict what was the correct counterweight for a particular lift, in which case he would adopt his customary or average practice of fitting say an overbalance of 40 per cent. of the maximum load asked for: that was to say, upon a 1 ton lift he would counterbalance the weight of the car and add 8 cwt. in addition to the counterweight. That additional weight would be in the form of cast iron slips, and if it did not represent the actual average load carried by the lift it would not be the most economical counterweight. A very small variation in counterweight might make a very large difference in the annual cost of energy consumption.

Dealing with the development of mechanical safety gears, Mr. Marryat said the four suspension ropes were reeved round grooved pulley wheels fixed in the crown bar of the car and were then brought down to the underside of the car, where they were anchored to malleable iron equalising rockers. The rockers themselves were attached to a "Butterfly" casting which had a free lateral movement under the car so that the whole arrangement allowed of the load equalising itself over the four ropes, and automatic adjustment took place in the event of any one or more of the ropes stretching more than their neighbours. There was, however, a limit to the movement of the "butterfly" casting, and should any rope stretch unduly that limit was reached and the "butterfly" would come into contact with a cam which operated directly on the shafts carrying the safety grips, so forcing those into action upon the guides. One advantage of that type of gear was that owing to its being constantly in a state of floating motion it was—when called into action on emergency—never found to be either rusted up or jammed in any way. Another was that by equalising the strain upon the several ropes the wear was at the same time equalised. The wedge grip type was now more often employed here and was fast superseding all other types of mechanical safety gear in America, where the speed of lifts was considerably higher. That gear consisted of a shaft carrying a drum at its centre. At its extremities the shaft screwed into wedge-shaped pieces so that if the shaft was rotated those wedges were forced between a pair of powerful grips so that they closed upon the guides. A light cord was reeved several times round the drum mentioned and then carried to the head of the lift well where it passed over a centrifugal governor. The governor was designed so that in the event of the speed exceeding a certain predetermined limit the cord was gripped, so causing the drum on the safety gear to rotate and the wedge and grips to come into action. An inconvenience attaching to that type of safety gear was the difficulty of releasing it when once it had come into operation. Whatever type of safety gear was employed, it was of the greatest importance that no part of the strain when it came into operation should be thrown upon the cabinet work of the car. It was also important to ensure that the four dogs or grips should act simultaneously, because if the action took place on one side of the car only, when the latter was travelling at a great speed, the structure would probably be distorted and any load in the car might be thrown against the attendant, or passengers against one another.

By the employment of an automatic push-button electric lift the services of an operator were dispensed with. Against that very considerable economy must be set the increased first cost and the necessary introduction of a large number of safety devices, which were unneeded where an operator had control of the lift and was alone able to open the gates. He drew attention to the method of control patented by his partner, Mr. Murray D. Scott, and largely employed by other lift makers who manufactured under royalty. In that controller the shunt field of the motor was always left connected across the armature when the main circuit was disconnected. The arrangement entirely eliminated a large class of failures due to inductive discharge on breaking the field circuit. Another and most valuable feature was that the controller was double pole, the main source of supply being switched on and off at both poles at each operation of the lift. That eliminated a most insidious form of fault inherent in almost every other form of controller, in which an earth developing on one or other part of the control system might, under certain circumstances, allow of uncontrolled movement of the car.

His partner also developed a most ingenious form of deceleration device. Its purpose was to reduce the speed of a lift before arriving at floor level. A further development of the idea had led to the introduction of an entirely new form of control, in which the operator or passenger starts the lift by means of a car switch, but instead of accurately gauging and stopping at floor level he merely released the car switch when approaching the floor he desires to stop at, *i.e.*, at any time after having passed the previous floor. The lift then stopped automatically at the desired floor level.

In the construction of modern lifts smoothness of running was second only to smoothness of acceleration and deceleration. To secure smooth running the gear must be properly machined and in full mesh. The guides must be smooth and in perfect alignment; the shoes on the cars must be of ample proportion and properly sprung loaded, and generally the whole construction must be rigid and accurate. The use of a floor selecting switch, operated direct from the gear shaft, eliminated one cause of noise and vibration in the lift well, viz., that caused by the floor switches when they came into contact with the ramp on the car as it passed the various floors. If floor switches were used they must be specially constructed to act as silently as possible and at the same time the ramp on the car must be specially designed to reduce to an inappreciable minimum the jar when it came into mechanical contact with the rollers of the floor switches.

In England they were fortunately free from the many restrictive regulations which applied to the construction of lifts of other countries, and it said much for the skill and conscientiousness of British engineers that whilst they had a perfectly free hand in the design of lifts for other than factory buildings yet the number of accidents which occurred were extremely small and the percentage of accidents in factory buildings where certain regulations had to be observed, compared with those in other public and private buildings, did not indicate that the public lost anything by the absence of Government or municipal control. There were still many problems to be solved by the lift designer, but the principal one was perhaps that of securing the co-operation and confidence of architects and building owners at an earlier stage in the evolution of the plans of a new building.

DONCASTER MASTER BUILDERS' ASSOCIATION.

The annual dinner of the Doncaster Master Builders' Association was held recently, Mr. G. W. Swift, President, being in the chair.

The toast of "The Visitors" was proposed by Councillor Knight, and in responding, Mr. E. Quibell, ex-President of the Federation, said he found that great objection had been taken to the National Federation having taken too much on to its own shoulders. The Federation had been forced into that position because the operatives had nationalised nearly all their procedure. There was still a great amount of work for local associations to do, because without them neither the Yorkshire nor the National Federation could exist. The status of the building industry had been considerably improved because of the existence of the National Federation, and they had been able to make their voice heard in Parliament. The National Federation had several times been approached by the Government for advice, but he was sorry the Government had not always acted on it. At one time such a thing as this would have been impossible. Some people talked about the good old days, but he never remembered anything very good about the building trade in the old days. It was now in a much better position, because of the good comradeship between builders.

Mr. Forsdike, ex-President of the Federation, also replied, and remarked that the builders had said the cost of the Federation was too great, but they did not pay one-tenth what the operatives did to their organisation, and the contribution for Yorkshire was lower than for any regional Federation in the country. If they could get all builders to work shoulder to shoulder they would be doing their best for the building trade of the country.

Mr. T. S. Gill submitted "The Yorkshire Federation," and Mr. R. Charlesworth, in responding, said that owing to the personality of the National Federation and the respect shown to them by architects and surveyors they were getting into closer relations with the members of those professions. He believed the building industry had a great future before it. They were hoping the time would come when their industry would be able to enter into their privilege and right to build houses for the people without interference.

Ontario Hardware Exhibition.

His Majesty's Trade Commissioner at Toronto reports to the Department of Overseas Trade that the eighteenth Annual Convention and Exhibition of the Ontario Retail Hardware Association will be held at the Armouries, Toronto, from February 13 to 16. The Trade Commissioner strongly recommends that British firms with local managers or agents should participate in the exhibition, and points out that, although the exhibition is promoted by the retail hardware trade, Ontario, wholesale manufacturers and their agents exhibit annually in order to stimulate the demand from the retailer. He further suggests that British firms interested in the Exhibition, but having no agents in Canada, might wish to avail themselves of the offer of a local manufacturer's agent who is prepared to display at the exhibition the samples of any firms who may appoint him as their agent in Ontario and Quebec provinces. Further particulars as to this offer may be had on application to the Department of Overseas Trade, 35, Old Queen street, London, S.W.1. (Reference, E.D. 4,103.)

NEW BUILDINGS IN LONDON.

EDGWARE.—Messrs. Cross & Cross, estate agents, Edgware, inform us that during the past twelve months great developments have taken place in Edgware and district. The extension of the Tube Railway from Golders Green, which is to be running by this time next year, has created such a demand for building land as can only be compared to the "boom" which occurred at Golders Green a year or so before the Tube Station was opened there. The greatest demand for land has been within the immediate vicinity of the proposed station and Messrs. Cross & Cross have dealt with shop plots adjoining the terminus at satisfactory figures, and already a dozen or so of the best-known multiple firms have decided to acquire premises in the first block of 19 shops which are now about to be erected.

GRAY'S INN-ROAD.—In connection with Messrs. Willing & Co.'s proposed extension in Gray's Inn-road, the architects are Messrs. Hart & Waterhouse, of 1, Verulam-buildings, Gray's Inn, W.C. 1.

ROTHERHITHE.—Not only a public improvement, but an important addition to the wharfage accommodation of the Thames, has been provided by the construction of the Horseferry Wharf on the south side of the river at Rotherhithe, between Bellamy's and the Surrey Commercial Dock, says the *Morning Post*. An old dry dock has been filled in back to the roadway and 30,000 ft. of space between that and the stream equipped with all appliances for the expeditious handling and efficient storage of cargo. Instead of being flush with the river, like the old wharves, this one, which is the enterprise of the Horseferry Wharfage and Shipping Company, has 200 ft. of quay frontage standing 5 ft. above the 20-foot level of high spring tide, and 6 ft. more above neap tide, while cranes of five tons and three tons' capacity make it possible to raise large loads of merchandise and drop them on to the quay.

ALDWYCH.—The centre block of the building which the Bush Terminal Company of New York is erecting on the Aldwych island site, Strand, W.C., is nearing completion. The building is 80 ft. high. It was intended to house showrooms for manufacturers similar to the Bush Terminal Sales Building in New York, but the newly-finished portion will, it is understood, be let out as offices.

MILL-HILL.—Messrs. Patman & Fotheringham, Ltd., Park-street, Islington, N. 1, are commencing a contract for a large extension of St. Joseph's College, Mill-hill, N.W. No sub-contracts have yet been placed.

STRAND.—To bring the Strand alignment between Wellington-street and Charing Cross back to the present line of the Savoy and Cecil Hotels has been long decided upon as a necessary London improvement, says the *Morning Post*. "After the Armistice, it was expected that, at the Wellington-street end, an immediate start would be made, but scarcity of building labour and other causes intervened. But a middle section is now to be taken in hand. The rebuilding on the site of the old Tivoli Theatre has made it possible to set the road back on that frontage. By the summer, we are informed, the stretch from the Tivoli site to a point in front of Agar-street, Strand, will also be aligned back. This will necessitate the pulling down of the series of shops of various kinds fronting the Strand and having a rear frontage to Durham House-street. The improvement will stop short, for the present, of the old George-court—one of the typical narrow alleys of old London which abuts on to the Adelphi quarter. This will leave in the widened Strand a little promontory between the Cecil Hotel and Adam-street, narrowing the thoroughfare there dangerously. Some hopes that this, too, was disappearing have been raised by the fact that some demolition work has been carried out on the top story of one of the two buildings. But these hopes, we learn by inquiry at the offices of the London County Council, are vain so far as immediate action is concerned."

WAGES IN THE BUILDING INDUSTRY.

A CONFERENCE of bodies affiliated to the National Wages and Conditions Council met at the Ministry of Labour on Tuesday last to consider questions affecting the industry. Decision on the hours question is reserved for the conference of the Wages and Conditions Council, which will sit in London later this week.

The agreed official report was issued as follows:—

"Upon the invitation of the National Wages and Conditions Council for the building industry, a meeting of the executives of the various organisations affiliated to the Council was held to-day, under the chairmanship of Mr. S. Easten, at Montagu House, Whitehall, for the purpose of securing a better understanding of the position by those whose province it is to secure the application of the Council's awards, as to which difficulties have been experienced from time to time.

"As this was the first meeting of the kind since the Wages and Conditions Council was established, some review of its work took place, and some of the difficult questions about to be considered by the Council were referred to. Eventually a vote of confidence in the Council was carried unanimously, and the meeting adjourned."

LONDON MASTER BUILDERS' SPORTS ASSOCIATION.

League table up to and including January 6.

	P.	W.	L.	D.	Goals. F.	A.	Pts.
Perrycobow ..	6	5	1	0	16	10	10
Minter	3	3	0	0	8	5	6
Trocoll ..	4	2	2	0	7	5	4
Holancube ..	2	1	1	0	4	4	2
Higadillo ..	5	1	4	0	4	4	2
Holloway ..	4	0	4	0	3	8	0

Last Saturday: Minter, 2; Perrycobow, 1.

The National Housing Policy.

We have received from the National Federation of House Builders a copy of the suggested National housing programme which has been prepared by the Federation, a résumé of which we published in our last issue.

Builder's Estate.

Mr. Peter Tinckham, of Delgarno-gardens, North Kensington, builder, left estate value £10,555.

Obituary.

The death has occurred suddenly at Scarborough of Mr. Andrew W. Sinclair, builder and contractor. He was some years ago President of the National Federation of Building Trades' Employers, and was also an ex-President of the Yorkshire Federation of Building Trades' Employers.

The death has occurred of Mr. William E. Willis, builder and contractor, of Dan-i-beri, Ystrad, Rhondda.

The death has taken place of Mr. Rhys Jones, Coychurch, Bridgend, builder, at the age of 71 years. He carried out many of the Mid-Glamorgan drainage schemes.

Change of Title of the Concrete Institute.

Pursuant to an Order of Court made by Mr. Justice Eve, on November 28, 1922, and confirmed by the Board of Trade, the title of The Concrete Institute has been altered to "The Institution of Structural Engineers." The address continues for the present to be Denison House, Vauxhall Bridge-road, Westminster, but there is a prospect that in the near future the Institution will acquire premises of its own.

NEW BUILDINGS IN SCOTLAND.

NAIRN.—The Town Council has received a communication from the Board of Health with reference to the housing scheme. Subject to the arrangement as to the erection of a boundary wall being agreed to by the proprietors, the Council found that matters were in order for proceeding with the scheme, and decided that the necessary steps for completing the arrangements and carrying out the work should be entered into at once.

FERRYDEN.—The Montrose Town Council has granted permission to the Ferryden and District Mission to erect a hall, about 30 ft. by 18 ft., on ground belonging to the Coaster Construction Co., Ltd., near the north side of Rossie Island.

CLYDEBANK.—Plans have been passed for a mission hall to be erected on a vacant site at the east end of Radnor-street, for the Christian Brethren. The proposed building is to be a steel framed and brick erection, with seating accommodation for 300 people. Plans were also passed for a new R.C. School for Old Kilpatrick area. The school is to be built on the quadrangular system, and is to be two stories in height. The roofs are to be flat and protected with iron railings, and are to be used as playgrounds.

KINROSS.—The estimate of the cost of repairing the Old School was submitted recently by the Architect, involving an outlay of £400, exclusive of seats, furnishings, &c. It was recommended to extend the new school as the most economical, giving an addition of two or three new class-rooms, at an estimated cost of £1,700 or £1,800. It was agreed to ask Mr. Rutherford to meet the Authority at the School at an early date to discuss the various proposals. Plans were submitted from Mr. Anderson, joiner, Carnbo, amounting to £307 10s., which was considered a moderate charge for the work to be carried out at Carnbo Schoolhouse.

ARMADALE.—The Armadale Miners' Welfare Committee have received £2,000 from the Armadale Public House Society, Ltd., to enable them to get an ideal institute for Armadale. The grant from the Welfare Fund is £5,000, and, along with the other £2,000, the institute can be built, and a balance left over to meet any possible extras for future expenses.

LOCHMABEN.—It was agreed at a meeting of the Wigtonshire County Council in Stranraer to withdraw objections to the proposed Lochmaben Sanatorium scheme.

GLASGOW.—It is proposed to erect a general hospital. First option had been obtained on a site of twenty acres at Cannieston Toll. Plans have been prepared and estimates given, but the scheme will not proceed until the necessary capital has been subscribed.

ERROL.—The Perthshire County Council has passed plans for the conversion of Murie House, Errol, into a joint city and county sanatorium, at an estimated cost of £61,000. The plans were prepared by Mr. G. P. K. Young, Tay-street, Perth.

KIRKALDY.—The gasworks manager has been instructed to obtain estimates for the erection of a new coal store to hold about 1,390 tons.—The Town Council has adopted the lay-out plans submitted by the architect, Mr. Syme, for thirty-two additional houses on the Overton-road site.

DUNDEE.—The following plans have been submitted to the Works Committee of the Town Council for approval: Addison-road, Broughty Ferry, villas, for James Suttie; Adelaide-place, garage, for McLaren, Soutar & Salmond; Ancrum-road, house, for Allan & Friskin; Gordon-street, Barnhill, garage, for C. G. Soutar; King-street, Broughty Ferry, alterations and additions, for Gouldie & Hardie; Montague-street, Barnhill, garage, for A. M. Stoole; Neville-street, Downhill, cottages for Charles Gray; Park-road, Downhill, villa,

for Mrs. D. W. Lawson; and Westfield-avenue fire escapes for Valentine & Sons, Ltd.

EDINBURGH.—The Town Council has agreed to proceed with the erection of 20 houses at Corstorphine.—Plans have been passed by the Dean of Guild Court for a four-story motor factory in Semple-street, for Alexander & Co., motor engineers; an extension to the West Mills, Colinton, for A. & R. Scott, Ltd., and workshops at Ballantyne-road, Leith, for the Huntly Oil Co.—The Dean of Guild Court has received a petition for the erection of the war memorial at Merchiston Castle School, Colinton-road. The proposed memorial consists of a rectangular building of the Scottish baronial style, and the cost is estimated at about £15,000.

BATHGATE.—The late ex-Provost Gordon, who died a short time ago, has made a bequest of £5,000 to the Town Council for the erection of municipal buildings.

BUCKIE.—The Town Council has received the sanction of the Board of Health to build 10 more houses on the Freuchny site. The Council has agreed to accept the offer but has instructed the clerk to apply for sanction to build 50 houses.—Plans have been passed of the secondary school which is to be erected at an estimated cost of £30,000.

CRIEFF.—Plans have been approved for a picture house in Church-street. The plans were submitted by Mr. Peter Crerar, High-street, Crieff.

FALKIRK.—Plans have been passed for a bungalow in Major's Loan for J. Maxwell & Sons, Meeks-road, Falkirk. The cost of the building is estimated at about £1,200.

GALASHIELS.—The War Memorial Committee have approved of the improved plans prepared by Sir Robert Lorimer for the war memorial and extension of the municipal buildings. A special feature in the new plans is the clock tower, which is to be erected on the frontage towards the Corn Mill-square. The municipal buildings are to be extended eastwards towards Albert-place and Paton-street.

DUMBARTON.—Plans have been passed for the erection of a pavilion at the greens off Church-street, for the Dumbarton Bowling Club. The building will be of brick and roughcast. The architects are Messrs. Denny & Blain, Dumbarton.—The Town Council have under consideration plans for the erection of 20 washhouses at a cost of £3,500.

LEITH.—Plans and specifications are being prepared for the new wing which is to be added to Leith Hospital as a war memorial, and tenders will be invited shortly. The funds in hand now amount to £60,000.

PRESTWICK.—The Dean of Guild Court has passed plans for houses and other buildings, the total amounting to an estimated cost of £8,527.

DALMELLINGTON. — The Ayrshire County Council has given the Ayrshire District Committee permission to borrow £800 for providing a central depot for the storing of road plant and £1,100 for the erection of a blacksmith's cottage at the central depot and for a roadman's cottage at Dalmellington.

AIRDRIE.—The Town Council proposes to build 220 small dwellings which are to contain one room, kitchen and bathroom.

ABERDEEN.—The Corporation Housing Committee has approved of the report by the deputy Medical Officer of Health, the Sanitary Inspector and the Director of Housing in connection with the demolition of uninhabitable houses, numbering 1,099, and the erection of 1,120 new houses. The sites proposed for the new houses, which are estimated to cost £587,500, are Torry, Whitehall-road, Willowbank-road, and Hilton.

GREENOCK.—Plans have been passed by the Dean of Guild for four blocks of double cottages of the bungalow type, to be built at the corner of Johnstone-street and Union-street, by Mr. W. H. Kirkwood.—The Corporation has agreed to forward a report to the Board of Health in connection with the insanitary houses in the town. The master of works states that the number of such houses is 1,489, and that there are in addition dwelling-houses in the area which has been acquired by Harland & Wolff numbering 366. The scheme to house the dispossessed tenants will cost about £385,000.

RATES OF WAGES IN THE BUILDING TRADE.

The following are the rates of wages in the building trade in England and Wales. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers	Slaters.	Plumbers	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
Aberdare	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Accrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Altrincham	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Ashton-under-Lyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Barnsley	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Barrow-in-Furness	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Barry	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Bath	1/5	1/5	1/5	1/5	1/5	1/5	1/5			1/0½
Bedford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Birkenhead	1/9	1/9	1/9	1/9	1/9	1/10	1/9			1/1½
Birmingham	1/8	1/8	1/8	1/8	1/8	1/9	1/8			1/3
Bishop Auckland	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Blackburn	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Blackpool	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Bolton	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Bournemouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Bradford	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Bridgwater	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½			0/11½
Brighton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Bristol	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Burnley	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Burton-on-Trent	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Bury	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Cambridge	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Cardiff	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Chatham	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/0
Chelmsford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Cheltenham	1/5	1/5	1/5	1/5	1/5	1/5	1/5			1/0½
Chester	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Chesterfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Colchester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Coventry	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Crewe	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Darlington	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Derby	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Doncaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Dudley	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Durham	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
E. Glam. (Mon. Vall.)	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Eastbourne	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Exeter	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Folkestone	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/0
Gloucester	1/5	1/5	1/5	1/5	1/5	1/5	1/4			1/0½
Grantham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Grays	1/8	1/8	1/8	1/8	1/8	1/8½	1/7			1/3
Grimsby	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Great Yarmouth	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/0
Guildford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Halifax	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Harrogate	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Hartlepools	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Hastings	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/0
Hereford	1/5	1/5	1/5	1/5	1/5	1/5	1/4			1/0½
Huddersfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Hull	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Ipswich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Lancaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Leamington Spa	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Leeds	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Leicester	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Lichfield	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Lincoln	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Liverpool	1/9	1/9	1/9	1/9	1/9	1/10	1/9			1/4
Llanelly	1/8	1/8	1/8	1/8	1/8	1/8	1/7			1/3
London	1/8	1/8	1/8	1/8	1/8	1/8½	1/8			1/3
Loughborough	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/0½
Luton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0
Maidstone	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/3
Manchester	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Mansfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Merthyr Tydfil	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Middlesbrough	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Newcastle-on-Tyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Newport, Mon.	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Northampton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Norwich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Nottingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Oakham	1/5	1/5	1/5	1/5	1/5	1/5	1/5			1/0½
Oldham	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Oxford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Plymouth	1/6	1/6	1/6	1/6	1/6	1/6	1/5			1/1½
Pontypridd	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Portsmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Preston	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Reading	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Rochdale	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Rochester	1/4	1/4	1/4	1/4	1/4	1/4	1/4			1/0
Rugby	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
St. Albans	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
St. Helen's	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Scarborough	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Sheffield	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Shrewsbury	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
Southampton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Southend-on-Sea	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Southport	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
South Shields	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Stockport	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Stockton-on-Tees	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Stoke-on Trent	1/8	1/8	1/8	1/8	1/8	1/9	1/8			1/0½
Stroud	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4			1/3
Sunderland	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Swansea	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/0½
Swindon	1/5	1/5	1/5	1/5	1/5	1/5	1/4			1/0½
Taunton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Torquay	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/0½
Tunbridge Wells	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/3
Wakefield	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/2
Walsall	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/3
Warrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
West Bromwich	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/3
Wigan	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/0½
Windsor	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½			1/3
Wolverhampton	1/8	1/8	1/8	1/8	1/8	1/8	1/8			1/2
Worcester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			1/2
York	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½			

(For rates of wages in the Building Trade in Scotland, see page 98.)

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

JANUARY 13.—**Tremain.**—HOUSE.—Erection of house.—Mr. D. Davies, "Brynhyfryd," Blaenanerch.

JANUARY 15.—**Bargoed.**—CONVERSION.—For conversion of army hut into ex-servicemen's club. Messrs. Wm. Harris & Son, architects, Bargoed.

JANUARY 15.—**Barrow.**—EXTENSION.—For extension of the Abbey sub-station and construction of convenience, for the T.C. Borough Engineer, Town Hall, Barrow.

★JANUARY 15.—**Chiswick.**—EMBANKMENT.—Erection of concrete river embankment walls at Strand-on-the-Green, for the U.D.C. Engineer and Surveyor, Town Hall, Chiswick.

JANUARY 15.—**Denny.**—HOUSES.—For the various works in connection with the erection of 12 houses at the Anderson-street site, for the Burgh of Denny and Dunipace Housing Scheme. Mr. Alexander Hendry, Town Clerk, Town Clerk's Office, Denny.

JANUARY 15.—**Eccles.**—CONVENIENCES.—Alterations and additions to the men's underground convenience and a new underground convenience for ladies at the Market Place, for the T.C. Borough Engineer, Town Hall, Eccles.

JANUARY 15.—**Edinburgh.**—PAINTING.—Internal painting, &c., at (1) General Post Office, Edinburgh; (2) Royal Scottish Museum, Edinburgh. H.M. Office of Works, 4, Drumsheugh-gardens, Edinburgh. Deposit £1 1s. each.

JANUARY 15.—**Glasgow.**—GOLF HOUSE.—Erection of golf club house at Littlehill, for the T.C. Office of Public Works, City-chambers, Glasgow.

JANUARY 15.—**Ramsey.**—HOUSES.—Erection of four blocks of workmen's dwellings, for the Town Commissioners. Messrs. G. Kay & Sons, architects, Douglas.

JANUARY 15.—**Port Talbot.**—CONVENIENCES.—Erection of public conveniences at Aberavon Beach and at Talbach, for the T.C. Borough Engineer, Municipal-buildings, Port Talbot.

JANUARY 15.—**Scotland.**—HOUSES.—Erection for the Board of Agriculture for Scotland of ex-soldier colony houses at the following places:—Damhead Farm, near Loanhead, 32 houses; Boghouse Farm, near Yoker, 7 houses; Grassmylees Farm, Mauchline, 9 houses; Whitemyres Farm, Aberdeen, 10 houses; Scotstoun, Laurencekirk, 4 houses. Board of Agriculture for Scotland, York-buildings, Edinburgh. Deposit £1 1s. each set.

JANUARY 15.—**Walsall.**—GARAGE.—For construction of garage, for the Tramways Committee of the T.C. Mr. J. Taylor, Borough Engineer, Council House, Walsall.

JANUARY 15.—**Watford, Herts.**—HOSPITAL.—Erection of Watford and District Peace Memorial Hospital (about 100 beds and administrative quarters). Honorary Treasurer, Lyndale, Upton-road, Watford, Herts.

JANUARY 16.—**Glasgow.**—HOUSES.—Erection of 352 houses at Newbank and Belvidere, for the T.C. Mr. J. Lindsay, Town Clerk, City-chambers, Glasgow.

JANUARY 16.—**Ipswich.**—SHEDDING.—Erection of shedding, &c., for the Suffolk Agricultural Show, at Ipswich. Mr. Will K. Bond, Secretary, 6, Butter Market, Ipswich.

JANUARY 16.—**Manchester.**—ALTERATIONS.—For alterations for open access at the Ancoats Branch Library, for the T.C. City Architect, Town Hall, Manchester. Deposit £1 1s.

JANUARY 16.—**Nottingham.**—PAINTING.—Painting Hyson Green reading-room, for the T.C. City Architect, Guildhall, Nottingham. Deposit £1.

JANUARY 16.—**West Bromwich.**—REPAIRS.—For general repairs, &c., at the District Schools, Wigmore, West Bromwich. Mr. A. H. Ward, Clerk to the Managers, 22, Lombard-street, West Bromwich. Deposit £1 1s.

JANUARY 17.—**Ashton-under-Lyne.**—HOUSES.—Erection and completion of 60 Class "A" houses of one type in pairs (being 30 houses for the Corporation of the Borough of Ashton-under-Lyne and 30 Ministry of Health State-aided houses), to be erected on the Heys Estate, off Mossley-road, Ashton-under-Lyne, for the Housing Committee of the Borough. Messrs. W. H. George & Son, architects, 7, Warrington-street, Ashton-under-Lyne. Deposit £2 2s.

JANUARY 17.—**Bettws.**—ALTERATIONS, &C.—For carrying out improvements, interior reconstruction, new seating, &c., for the C.M. Church, Bettws, for the Trustees. Mr. Robert A. Ford, architect and surveyor, Llanidloes

JANUARY 17.—**Hammersmith, W.6.**—CONCRETE AND TIMBER CONSTRUCTION.—Construction of an open-air swimming-bath, comprising a concrete swimming pond and timber-framed buildings, for the Metropolitan Borough Council. Borough Engineer and Surveyor, Town Hall, Hammersmith. Deposit £2 2s.

JANUARY 17.—**Llantrisant.**—PAINTING.—For painting at Castellau Chapel, near Llantrisant. Secretary, Evan Rees, "Ardwyn," Llantwit Vardre.

JANUARY 18.—**Leigh.**—PAINTING.—Painting and decoration of the interior of the Town Hall, for the T.C. Mr. T. A. Clare, Borough Engineer, Town Hall, Leigh.

JANUARY 18.—**Smallshaw.**—HOUSES.—Erection of a pair of semi-detached houses in Smallshaw, Ashton-under-Lyne. Messrs. W. H. George & Sons, architects, 7, Warrington-street, Ashton-under-Lyne.

JANUARY 19.—**Holloway, London.**—PAINTING, &c.—For internal painting works at the Money Order Office, for the Commissioners of H.M. Works, &c. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W. 1. Deposit £1 1s.

JANUARY 19.—**Leeds.**—MARKET EXTENSION.—Extension of the Wholesale Meat Market, Slaughter-house, Latrage, &c., in New York-street, for the T.C. Messrs. Braithwaite & Jackman, 6, South-parade, Leeds. Deposit £2 2s.

JANUARY 19.—**London, E.C.**—REBUILDING.—Rebuilding of the Branch Post Office, Threadneedle-street, E.C., for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London S.W.1. Deposit £1 1s.

JANUARY 19.—**London, S.E.**—REBUILDING.—For rebuilding front, &c., of the Postmen's Office, South Norwood, for the Commissioners of H.M. Works, &c. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W. 1. Deposit £1 1s.

JANUARY 19.—**Tyne Dock.**—ALTERATIONS.—Alterations to engine shed at Tyne Dock, for the North-Eastern Railway Co. Mr. S. Wilkinson, Architect, Irvine House, Westgate-road, Newcastle-on-Tyne.

JANUARY 19.—**Walthamstow.**—SUB-STATION.—Erection of a static sub-station at the Broadway, Highams-park, for the U.D.C. Mr. G. W. Holmes, Town Hall Annexe, Walthamstow.

★JANUARY 20.—**Alnwick.**—HOUSES.—Erection of 24 houses in one or more pairs, for the U.D.C. Messrs. G. Reavell, F.R.I.B.A., & W. Arthur Tebbs, Lic. R.I.B.A., architects, Lloyds Bank Chambers, Alnwick. Tenders endorsed "Tender for 24 houses, Alnwick."

JANUARY 20.—**Beaminster.**—HEADQUARTERS.—Erection of infantry headquarters for the Dorset Territorial Army Association. Mr. F. T. Maltey, Architect, Dorchester. Deposit £2 2s.

JANUARY 20.—**Chester.**—BRIDGE.—Construction of ferro-concrete bridge over the Shropshire Union Canal, House-lane, for the T.C. Mr. C. Greenwood, City Engineer, Chester. Deposit £2 2s.

JANUARY 20.—**Edinburgh.**—RECONSTRUCTION.—Reconstruction of Tenement No. 2, Tweeddale-court, 14, High-street, for the T.C. Director of Housing, City Chambers, 329, High-street, Edinburgh.

JANUARY 20.—**Newcastle-under-Lyme.**—ADDITION.—Building of an operating room at St. John's Hospital, Keele-road. Mr. George Hollins, A.R.I.B.A., Market-place, Newcastle-under-Lyme. Deposit £1.

JANUARY 20.—**Rochford.**—BUNGALOWS.—Erection of three pairs of bungalows in the parish of Canewdon. Sanitary Inspector (Mr. A. C. Madge), at Rochford, Essex.

JANUARY 20.—**Tremain.**—HOUSE.—Erection of house and outbuildings at Tremain. Mr. D. Davies, Brynhyfryd, Blaenanerch, Cardiganshire.

JANUARY 22.—**Daventry.**—HOUSES.—For twelve houses in lots of six, or for the whole number; and alternately, for eight houses at Drayton, for the T.C. Mr. J. B. Williams, Borough Surveyor, The Moot Hall, Daventry.

JANUARY 22.—**Edinburgh.**—HOUSE.—Erection of house at Slateford Recreation Ground, for the Education Authority. Mr. John Stewart, Executive Officer, Education Offices, Edinburgh.

JANUARY 22.—**Fort William.**—HOUSES.—Erection of two blocks (4 houses) at Victoria Park site, for the T.C. Mr. J. G. Falconer, architect, Fort William.

★JANUARY 22.—**France.**—CEMETERIES.—Ninth programme of construction, consisting of approximately 22 cemeteries in France. Contract 1923 K, Secretary (Works Dept.), Imperial War Graves Commission, 82, Baker-street, London, W.1. Deposit 15 guineas.

JANUARY 22.—**Halifax.**—BATHS.—Erection of Park-road Baths, for the T.C. Mr. Alec. C. Tipple, Borough Engineer, Halifax. Deposit £2 2s.

JANUARY 22.—**Hinckley.**—PAINTING.—For painting Free Library, for the U.D.C. Mr. J. S. Featherstone, Surveyor, Council Offices, Hinckley.

JANUARY 22.—**Northampton.**—HOUSES.—For the erection of one block of eight houses, type B3, and two pairs of type B3 shops, on the Harlestone-road Estate, for the T.C. Mr. Alfred Fidler, M.Inst.C.E., Borough Engineer, Guildhall, Northampton. Deposit £5.

JANUARY 22.—**Salford.**—ALTERATIONS.—Certain alterations at the Union Infirmary, Stott-lane, Pendleton, for the Salford Board of Guardians. Messrs. W. T. Gunson & Son, 10, Marsden-street, Manchester.

JANUARY 23.—**Bath.**—HOUSES.—Erection of 50 houses at Englishcombe Park, for the T.C. Mr. A. J. Taylor, F.S.Arc., 18, New Bond-street, Bath. Deposit £1 1s.

JANUARY 23.—**Bewicke Main.**—SCHOOL.—Erection of school to accommodate 160 scholars; alternative tenders for (*a*) permanent and (*b*) semi-permanent buildings, for the Durham C.C. Mr. F. Willey, F.R.I.B.A., 34, Old Elvet, Durham.

JANUARY 23.—**Bruton.**—PAVILION, &C.—Erection of sports pavilion and cottage at King's School, Bruton, Somerset. Mr. A. J. Pictor, F.R.I.B.A., Bruton. Deposit £2 2s.

JANUARY 23.—**Crook.**—ALTERATIONS.—For alterations and repairs to Council School, for the Durham C.C. Mr. F. Willey, F.R.I.B.A., 34, Old Elvet, Durham.

JANUARY 23.—**Doncaster.**—CONVENIENCE.—Construction of an underground lavatory in the Market-place, for the T.C. Mr. F. O. Kirby, Borough Engineer, 2, Priory-place, Doncaster. Deposit £1 1s.

JANUARY 23.—**Hamsterley Colliery.**—REPAIRS.—For general repairs to Council School, for the Durham C.C. Mr. F. Willey, F.R.I.B.A., 34, Old Elvet, Durham.

JANUARY 23.—**Hunwick.**—SCHOOL.—Erection of school to accommodate 560 scholars, for the Durham C.C. Mr. F. Willey, F.R.I.B.A., 34, Old Elvet, Durham.

JANUARY 23.—**Seaham Harbour.**—ALTERATIONS.—For alterations and repairs to Council School, for the Durham C.C. Mr. F. Willey, F.R.I.B.A., 34, Old Elvet, Durham.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Brick-layers.	Car-penters, Joiners.	Plas-terers.	Slaters.	Plum-bers.	Painters.	Masons' Brick-layers' Labourers.	Plas-terers' Labourers.
Aberdeen	1/7	1/7	1/7	1/7	1/8	1/8½	1/4	1/- to 1/3	
Airdrie	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3	
Alexandria	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/2	
Arbroath	1/-	1/7	1/7	1/7	1/7	1/7	1/6½	1/1	
Ayr	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3	
Bathgate	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/2	
Blairgowrie	1/7	—	1/7	1/7	1/7	1/7	1/6½	—	
Bo'ness	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/2	
Coatbridge	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3	
Dumbarton	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3	
Dumfries	1/6	1/6	1/6	1/6	1/6	1/8	1/6½	1/2	1/2½ 1/3½
Dundee	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3	
Dunfermline	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/2	
Edinburgh	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3	
Falkirk	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3	
Fort William	1/6	1/6	1/6	1/6	1/6	1/6	1/6½	1/1½	
Galashiels	1/6	1/6	1/6	1/6	1/6	1/6	1/5½	1/1½	
Glasgow	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3	
Greenock	1/8	1/3	1/8	1/8	1/8	1/8	1/6½	1/1 to 1/3	
Hamilton	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3	
Hawick	1/6	1/6	1/6	1/6	1/8	1/6	1/6½	1/1½	
Helensburgh	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3	
Inverness	1/6½	—	1/6	1/7	1/6½	1/7	1/6½	10d. to 1/2	
Kilmarnock	1/8	1/6	1/8	1/8	1/8	1/8	1/6½	1/3	
Kirkcaldy	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/2	
Kirkwall	1/5	1/5	1/4	1/7	1/5	1/5	1/6½	1/2	
Lanark	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3	
Leith	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/2	
Motherwell	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3	
Perth	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/2	
Stirling	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3	
Stirlingshire (Eastern District)	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3	
Wishaw	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3	

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 97.

JANUARY 23.—**London.**—PAINTING.—Execution of internal painting works at Cornwall House, Stamford-street, S.E. Contracts Branch, H.M. Office of Works, King Charles-street, S.W.1. Deposit £1 1s.

JANUARY 23.—**London.**—PAINTING.—Execution of internal painting works at Somerset House, W.C. Contracts Branch, H.M. Office of Works, King Charles-street, S.W.1. Deposit £1 1s.

JANUARY 23.—**Ryhope Colliery.**—REPAIRS.—For general repairs to Council School, for the Durham C.C. Mr. F. Willey, F.R.I.B.A., 34, Old Elvet, Durham.

✱JANUARY 24. — **Barnet (Herts).** — HOUSES. — Erection of five pairs of houses at Watling-street, Elstree, and twelve pairs of houses at Furzehill-road, Boreham Wood, for the R.D.C. Mr. A. J. Wiltshire, Surveyor to the Council, Council Offices, Boreham Wood, Herts. Deposit 2 guineas.

JANUARY 24. — **Birmingham.** — FACTORY.—Erection of a P.O. Stores Factory for the Commissioners of H.M. Works, &c. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s.

✱JANUARY 24.—**Chelsea, S.W.3.**—GENERAL STORES. —Supply and execution of articles and works, the contract period being from April 1 next to March 31, 1924, unless otherwise stated, for the Metropolitan Borough Council. Contracts Nos. 1, 2, 3, 4, and 6, Mr. John T. Jefferys, Town Clerk: and in respect of the other contracts, Mr. T. W. E. Higgins, Borough Surveyor, Town Hall, King's-road, Chelsea, S.W.3. Deposit £10 Bank of England Note with each tender.

JANUARY 24.—**Halifax.**—HOUSES.—Erection of 54 houses at Stoney Bridge-lane, Boothtown, for the T.C. Mr. A. C. Tipple, Borough Engineer, Crossley-street, Halifax. Deposit £2 2s.

JANUARY 24.—**Manchester.**—HOUSES.—Erection of houses on the following estates:—Catterick Hall Estate, Fog-lane, Didsbury, from 4 houses up to 16 houses; Clayton Estate, North-road, Clayton, from 4 houses up to 120 houses; Newton Heath Estate, Briscoe-lane, Newton Heath, from 4 houses up to 20 houses; Blackley Estate, Walton-road, Victoria-avenue, Blackley, from 4 houses up to 180 houses, for the T.C. Housing Director, Town Hall, Manchester. Deposit £1 1s.

JANUARY 25.—**Greenwich.**—BUILDING.—(*a*) Excavation and piling works, (*b*) provision and erection of a steel frame and corrugated iron sheeted building, for the B.C. Borough Engineer, Town Hall, Greenwich. Deposit £2 2s.

JANUARY 25. —**Leeds.**—HOUSES.—Erection in brick or concrete of 50 houses on the Crossgates Estate, and 50 houses on the Middleton Estate, for the T.C. Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds. Deposit £1 1s.

JANUARY 25. — **Whitstable (Kent).** — HOUSES.— Erection of ten houses, in accordance with drawings and specifications prepared by Mr. A. A. Kemp, 9, Tankerton-terrace, Tankerton, Whitstable, for the U.D.C.

JANUARY 26. — **Guildford.** — HOUSES.—Erection of 50 houses on the Guildford Park Housing Estate, for the Corporation. Borough Surveyor, Tuns Gate, Guildford. Deposit £2 2s.

JANUARY 26. — **Hitchin.**—BRICK ENGINE HOUSE.— Erection of a brick engine house, with machinery, and two reinforced concrete water towers, one of 30,000 gallons and the other of 15,000 gallons capacity. The Clerk, Hitchin R.D.C., Council Offices, Hitchin. Deposit £2 2s.

✱JANUARY 26.—**Liverpool.**—ALTERATIONS, &C.— Alterations, &c., to premises for the Royal Telephone Exchange, Liverpool, for the Commissioners of H.M. Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s.

JANUARY 27. — **Botley.** — CHURCH. — Erection of church and schools at Hedge End, Botley, Hants. Mr. W. Bignel, Sec. to Trustees, United Methodist Church Building Committee, Hedge End, Botley, Hants.

✱JANUARY 27.—**Edmonton, N.18.**—ADDITION.— Erecting and finishing for use the superstructure of an additional block to the Nurses' Home, North Middlesex Hospital, Silver-street, Edmonton, for the Guardians of the Union. Mr. E. Ridley, Clerk to the Guardians, Edmonton Union, 77, Bridport-road, N. 18. Deposit £5 5s.

JANUARY 27.—**Selby.**—GOLF HOUSE.—Erection of a club house (250 members), with suitable living accommodation for groundsman, for the Golf Links Co. Mr. S. Brabbs, Secretary, James-street, Selby.

JANUARY 29.—**Sidmouth.**—ELECTRICITY BUILDINGS. —Erection of electricity buildings, for the U.D.C. Mr. W. M. Harris, engineer, Canal Iron Works, Kendal. Deposit £2 2s.

JANUARY 30. — **Leyton.** — SCHOOL.—Erection of a school for 400 boys at Canterbury-road, Leyton, E.10, for the Education Committee of the Leyton U.D.C. Mr. John H. Jacques, Lic.R.I.B.A., 61, West Ham-lane, Stratford, E.15. Deposit £2.

JANUARY 30.—**Liverpool.**—TELEPHONE EXCHANGE. —For the erection of the Bank Telephone Exchange for the Commissioners of H.M. Works, &c. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W. 1. Deposit £1 1s.

JANUARY 30.—**Warrington.**—HOUSES.—Erection of 42 houses in two blocks of eight and four each on the Reynolds-street site, for the T.C. Messrs. Wright & Hanlyn, Sankey-street Chambers, Warrington. Deposit £2 2s.

✱JANUARY 31.—**London, N.**—ROOFING AND REPAIRS.—New corrugated iron roofs and repairs, &c., to temporary buildings at North-Eastern Fever Hospital, St. Anne's-road, Tottenham, N.15, for the Metropolitan Asylums Board. Office of the Board, Embankment, E.C.4. Deposit £1.

JANUARY 31.—**Wokingham.**—REBUILDING.—Pulling down of two adjoining cottages and rebuilding of the Grey Bull Hotel, Wokingham, for Messrs. J. W. Cameron & Co. J. W. Cameron & Co., Ltd., 135, Newgate-street, Bishop Auckland. Deposit £2 2s.

FEBRUARY 3.—**Birmingham.**—BATH, &C.—Erection of a building for use as a swimming bath and other purposes, and for alterations and additions at the Children's Homes, Marston Green, for the Board of Guardians. Mr. James Curtis, Clerk, Union Offices, Edmund-street, Birmingham. Deposit £5.

✱FEBRUARY 13.—**Chelsea.**—DWELLINGS.—For the erection of working-class dwellings upon a site in Hortensia-road, for the B.C. Town Hall, King's-road, Chelsea. Deposit £2 2s.

NO DATE.—**Elisabethville.**—BUILDERS' WORK.— For builders' work in connection with sanitary improvements, construction of heating chamber, &c., for the Durham C.C. Mr. F. Willey, F.R.I.B.A., 34, Old Elvet, Durham.

NO DATE.—**Surrey.**—BUNGALOW.—Erection of a bungalow in Surrey, 35 miles London. E. F., 124, Bath-road, Hounslow, Middlesex.

FURNITURE, MATERIALS, etc.

JANUARY 13.—**Driffield.**—ROAD MATERIALS.—Supply of road materials to the R.D.C. Mr. T. C. Beaumont. Surveyor, Driffield.

JANUARY 13.—**Gloucester.**—MATERIALS.—Supply to the C.C. of tar, tar-spraying, oils, and miscellaneous stores. County Surveyor, Shire Hall, Gloucester.

JANUARY 13.—**Hunslet**—RAW MATERIALS.—Supply of road and paving materials to the R.D.C. Mr. W. B. Pindar, Clerk, Leek-street, Hunslet.

JANUARY 15.—**Aylesbury.**—GRITTING MACHINES.— Supply of gritting machines to Bucks C.C. Mr. E. Winfield, County Surveyor, Aylesbury.

JANUARY 15.—**Rhondda.**—SUPPLIES.—(*a*) For supply of bricks, stoneware pipes, iron tools, ironmongery, sundries, iron castings, pavings, kerbs, pitchings, Portland cement, paints, oils, &c.; (*b*) road macadam materials, limestone, &c., in various gauges. The Clerk, Council Offices, Pentre, Rhondda.

JANUARY 15.—**St. Pancras.**—MATERIALS.—Supply of Yorkshire stone, granite kerbs, paving setts, gravel, lime, cement, bricks, stoneware, pipes, and other glazed goods to the B.C. Mr. E. W. Swinstead, Borough Engineer, Town Hall, Pancras-road, N.W.1.

JANUARY 16.—**Wallasey.**—MATERIALS.—Supply of limestone, granite, cement and concrete flags to the T.C. Mr. W. H. Travers, Borough Engineer, Wallasey.

JANUARY 17.—**Alexandria.**—STORES.—Supply of general stores to the Ports and Lighthouses Administration, Dept. of Overseas Trade, 35, Old Queen-street, S.W.

JANUARY 17.—**Ipswich.**—MATERIALS.—Supply of road and other materials to the East Suffolk C.C. Mr. W. Jervis, County Surveyor, County Hall. Ipswich.

JANUARY 17.—**London.**—RED AND WHITE LEAD.— Supply to the East Indian Railway Co. of red and white lead. Mr. G. E. Lillie, Secretary, 73-76, King William-street, E.C.4. Charge £1 1s.

JANUARY 17.—**Salford.**—LIME.—Supply to the T.C. of 150 tons of lime. Borough Engineer, Salford.

JANUARY 17.—**Southampton.**—MATERIALS.—Supply to the County Council of road stone and slag. Mr. W. J. Taylor, County Surveyor, The Castle, Winchester.

JANUARY 17.—**Southampton.**—TAR.—Supply to the C.C. of tar for use on main roads. Mr. W. J. Taylor, County Surveyor, The Castle, Winchester.

JANUARY 19.—**India.**—PAINTS.—Supply to the High Commissioner of India of 596 cwts. of dry paint (service colour). Director-General, India Store Department, Belvedere-road, S.E.

✱JANUARY 22.—**Leyton, E.10.**—BALLAST.—Purchase and removal of excavated ballast from the gravel pit, Oliver-road, Leyton, during the three months ending on April 30, 1923, for the U.D.C. Mr. R. Vincent, Clerk to the Council, Town Hall, Leyton, E.10, endorsed "Tender for the Purchase and Removal of Ballast."

JANUARY 23.—**Willesden.**—MATERIALS.—Supply to the U.D.C. of road and other materials. Mr. F. Wilkinson, Engineer, Town Hall, Dyne-road, Kilburn, N.W.6.

JANUARY 23.—**Worthing.**—TAR.—Supply of 50,000 gallons of refined tar, to the T.C. Borough Surveyor, Municipal Offices, Worthing.

JANUARY 24.—**Reigate.**—MATERIALS.—Supply of road and other materials to the R.D.C. Mr. Arthur J. Head, Surveyor, 48, High-street, Reigate.

JANUARY 25.—**Pembroke.**—SUPPLY OF ROAD-MAKING MATERIALS.—For supply to the Pembroke R.D.C. of road material required in preparation of roads in or near twenty-eight parishes within the local government area. Mr. F. S. Jones, Clerk to the R.D.C., Main-street, Pembroke.

JANUARY 27.—**Chelmsford.**—MATERIALS.—Supply of road materials and oil to the Essex C.C. Mr. Wm. H. Morgan, County Surveyor, Old Court, Chelmsford.

JANUARY 29.—**Bermondsey.**—MATERIALS.—Supply of various materials to the B.C. Mr. Fredk. Ryall, Town Clerk, Town Hall, Spa-road, S.E.

JANUARY 29.—**Uckfield.**—MATERIALS.—Supply of road materials to the R.D.C. Capt. E. W. Rey-Johnson, Surveyor, Buxted.

JANUARY 30.—**Ryde.**—TAR.—Supply to the T.C. of 20,000 gallons of tar. Mr. Thomas J. Fawdry, Town Clerk, Town Hall, Ryde, I.W.

JANUARY 31.—**Canterbury.**—MATERIALS.—Supply of materials to the Roads and Survey Committee. Mr. Philip H. Warwick, City Surveyor, Municipal Buildings, Canterbury.

JANUARY 31.—**Islington.**—STORES.—Supply of stores to the Electricity Department. Electrical Engineer, 60, Eden-grove, Holloway, N.

JANUARY 31.—**Midhurst.**—MATERIALS.—Supply of road materials to the R.D.C. Mr. A. G. Gibbs, Surveyor, Council Offices, Midhurst.

JANUARY 31.—**Siam.**—RAILWAY STORES.—Supply to the Department of State Railways, Siam, of railway store materials. Messrs. C. P. Sandberg, 40, Grosvenor-gardens, S.W.1. Charge £2 2s.

FEBRUARY 2.—**Folkestone.**—MATERIALS.—Supply of materials to the T.C. Mr. A. E. Nichols, Borough Engineer, Corporation Offices, Folkestone.

✱FEBRUARY 3.—**Stepney, E.1.**—STORES, MATERIALS, HIRE, WORKS, &C.—Contracts for twelve months from April 1, 1923, except in regard to Contract No. 31 (Stationery) which will, at the Council's option, be for a period of one or three years from that date, for the Metropolitan Borough of Stepney, according to the conditions of Council. Contract 1 to 22, Borough Engineer and Surveyor (Mr. Bernard J. Belsher); 23 to 31, the Town Clerk (Mr. Geo. W. Clarke), Municipal Offices, Raine-street, Old Gravel-lane, E.1. Deposit £1 Treasury note in respect of each tender.

FEBRUARY 5.—**Calcutta.**—REFLECTORS.—Supply of 500 enamelled steel reflectors, suitable for Parkinson Pattern Lanterns, and 2,000 21 oz. English glass panes, 15 in. square, to the T.C. Superintendent of Stores, Corporation of Calcutta, Central Stores, 149, Lower Circular-road, Calcutta.

FEBRUARY 5.—**Hatfield.**—ROAD MATERIALS.—Supply of granite, slag and tar macadam, to the Hertfordshire C.C. Mr. A. E. Prescott, County Surveyor, Hatfield.

FEBRUARY 7.—**Middlesex.**—ROAD MATERIALS.—Supply of granite, tarred slag and granite chippings, to the Middlesex C.C. Mr. A. Dryland, County Engineer, Middlesex Guildhall, Westminster, S.W. 1.

NO DATE.—**Margate.**—TARSPRAYING MACHINE.— Supply of large-capacity tarspraying machines to the T.C. Mr. Ernest A. Borg, Borough Engineer, 13, Grosvenor-place, Margate.

ENGINEERING, IRON AND STEEL.

JANUARY 15.—**Dundee.**—PIPES.—Supply of 75 tons of water pipes to the T.C. Mr. G. Baxter, Waterworks Engineer, Commercial-street, Dundee.

JANUARY 15.—**Glasgow.**—ELECTRIC LIGHT.—Electric lighting installation of the Pollokshaws Housing Scheme, for the T.C. Electrical Engineer, 75, Waterloo-street, Glasgow.

JANUARY 15.—**Nottingham.**—STAIRCASES.—Repair of eight fire-escape staircases at the Infirmary, Basthorpe, for the Nottingham Board of Guardians. Mr. J. Allan Battersby, Clerk, Poor Law Offices, Shakespeare-street, Nottingham.

JANUARY 15.—**Tilbury.** — DESTRUCTOR. — Construction of refuse destructor, &c., for the U.D.C. Mr. S. A. Hill-Willis, Surveyor, Council Offices, Tilbury. Deposit £1 1s.

JANUARY 16.—**Edinburgh.**—FENCING.—For wrought iron unclimbable hurdle fencing and gates at (1) Comiston-road, (2) Lanark-road, for the T.C. City Road Surveyor, City Chambers, Edinburgh.

JANUARY 16.—**London.**—MATERIALS.—Supply to the Great Indian Peninsula Railway Co. of (1) anvils; (2) firebricks and fireclay; (3) copper plates, rods and ingots; (4) brass sheets, copper tubes, &c.; (5) bolts, nuts, rivets, &c.; (6) axle-boxes for carriages and wagons; (7) metals (lead sheets, tinned sheets and aluminium). Mr. R. H. Walpole, Secretary, 48, Copthall-avenue, E.C.2. Charges £1 for 3 and 6; 10s. for 2, 4, and 5; and 5s. for 1 and 7.

JANUARY 16. — **Newcastle-under-Lyme.** — TANKS. — Construction at the Sewage Disposal Works of two sedimentation tanks in reinforced concrete, each having a capacity of 112,000 gallons, for the T.C. Mr. A. A. Pattison, Borough Engineer, Municipal Offices, Newcastle-under-Lyme. Deposit £2 2s.

JANUARY 16 — **Torquay.** — STEELWORK BUILDING. —Supply and delivery and erection of (*a*) structural steelwork, and the erection of (*b*) buildings for their proposed new main sub-station and offices in Lymington-road, Torquay, for the Corporation. Mr. H. F. G. Woods, Borough Electrical Engineer and Manager, Town Hall, Torquay. Deposit £2 2s.

JANUARY 19.—**London.**—RAILWAY STORES.—Supply to the South Indian Railway Co. of: (1) Steel tyres for carriages and wagons; (2) rolled steel disc wheels and axles for carriages and wagons; (3) sheet and plate glass, &c.; (4) Sheffield tools, &c.; (5) locks, &c. Offices, 91, Petty France, Westminster, S.W.1. Charge 5s.

JANUARY 19.—**London.**—STEEL MATERIALS, &C.— Supply to the Bombay, Baroda & Central India Railway Co., of (1) steel materials; (2) punching and shearing machines. Mr. S. G. S. Young, Secretary, 91, Petty France, Westminster, S.W.1. Charge 10s. each.

JANUARY 22.—**Chesterfield.**—ROLLER.—Supply of 10-ton compound steam road roller to the T.C. Mr. V. Smith, Borough Engineer, 2, Gluman Gate, Chesterfield.

✱JANUARY 22.—**Lewisham.**—LIFTS, &C.—For supplying and fixing two electric lifts and machinery, together with the electrical work in connection with same, at Lewisham Hospital, S.E.13, for Guardians of Lewisham Union. Mr. W. R. Owen, Clerk to the Guardians, 394, High-street, Lewisham.

JANUARY 22.—**Manchester.**—SEWER IRONWORK.— Supply to the Public Health Committee of ventilating grids and other castings. Mr. J. Irvine, Manager of the Drainage Branch, Public Health Department, Civic Buildings, 1, Mount-street, Manchester.

JANUARY 22.—**South Africa.**—SYPHONS.—Supply of 50 4-in. cast-iron automatic sewer flushing syphons to the city of Port Elizabeth. Department of Overseas Trade, 35 Old Queen-street S.W.

JANUARY 23.—**Bradford.**—BOILERS.—Taking out old boilers and providing two multitubular boilers at Hammerton-street Destructor Works, for the T.C. City Architect, Bradford.

JANUARY 25. — **Greenwich.** — REFUSE DISPOSAL PLANT.—(*a*) The execution of excavation and piling works; (*b*) the provision and erection of a steel frame and corrugated iron sheeted building in connection with the refuse disposal plant at Tunnel-avenue Depot, for the Metropolitan Borough Council. Borough Engineer and Surveyor's Office, Town Hall, Greenwich. Deposit £2 2s.

JANUARY 26. — **Hitchin.** — IRON WATER MAIN.— Provision and laying of about 2,740 yards of 3 in., 210 yards of 2 in., cast iron water main, and 1¼ in. and ¾ in. galvanised water pipe, in accordance with plans and conditions of contract. The Clerk, Hitchin R.D.C. Offices, Hitchin. Deposit £2 2s.

JANUARY 27.—**Birmingham.**—SALVAGE PLANT.—Supply and erection of plant for refuse destructor and salvage works at Witton, for the T.C. Mr. J. Jackson, Superintendent, 161, Corporation-street, Birmingham. Deposit £1 1s.

JANUARY 27.—**Fulham.**—ROLLER.—Supply to B.C. of 10-ton steam roller with scarifier. Mr. A. F. Holden, Borough Engineer, Fulham, S.W.

JANUARY 29.—**Bermondsey.**—MATERIALS.—Supply of materials to the Electricity Department. Borough Electrical Engineer, Town Hall, Spa-road, S.E.

✱JANUARY 29.—**London.**—IRON FENCING.—Supply and erection of about 1,500 yards of 3 ft. 6 in. wrought-iron unclimbable fencing and gates at various parks and open spaces, for the L.C.C. Chief Officer, Parks Department, Administrative County of London, The County Hall, Westminster Bridge, S.E.1.

JANUARY 30.—**Caerphilly.**—SUPPLY OF MOTOR AND ELECTRIC LIGHT INSTALLATION.—For supply of 5-h.p. motor for a three-manual pipe organ and for complete installation of electric lighting at Van-road Congregational Church, for the Trustees. Secretary, Van-road, Congregational Church, Caerphilly.

JANUARY 30.—**London.**—STEELWORK.—Supply to the South Indian Railway Co. of structural steelwork. Charge 10s.

JANUARY 31.—**Australia.**—ELECTRICAL PLANT.—Supply of steam turbine and other plant to the Morwell Power Station, for the State Electricity Commission. Agent-General for Victoria, Melbourne-place, Strand, W.C. Deposit £2 2s.

FEBRUARY 1.—**Auckland.**—ELECTRIC CRANES.—For the supply of twelve five-ton (alternatively three-ton) semi-portal balanced jib electric quay cranes, four five-ton (alternatively three-ton) balanced jib electric roof cranes, and six one-ton electric mono-rail cranes, for Auckland Harbour Board. Messrs. W. & A. McArthur, Ltd., 18-19, Silk-street, Cripplegate, London, E.C.2. Deposit £2 2s.

ROAD, SANITARY, AND WATER WORKS.

JANUARY 11.—**Perth.**—ROADS.—Re-causewaying with Whinstone setts, portions of the carriageways of Main-street, South-street, and South-street Port, for the T.C. Mr. Thomas M'Laren, Burgh Engineer, Perth. Deposit £1 1s.

JANUARY 15.—**Cardiff.**—ROAD.—Making up of Cardiff and Penarth-road. Mr. E. W. M. Corbett, 3, Castle-street, Cardiff.

JANUARY 15.—**Chadwick End.**—ROADS.—Various improvements and widenings to the Birmingham-Warwick main road near Chadwick End, for the Warwickshire C.C. Mr. D. H. Brown, County Surveyor, 6, Northgate-street, Warwick. Deposit £2.

JANUARY 15.—**Chiswick.**—EMBANKMENT.—Erection of concrete river embankment walls at Strand-on-the-Green, for the U.D.C. Mr. Edward Willis, Surveyor, Town Hall, Chiswick.

JANUARY 15.—**Llanfrechfa Upper.**—ROADS.—Execution of road works on the Clarkville Estate, Pontnewydd, for the U.D.C. Mr. M. R. Jones, Ashley House, Pontnewydd.

JANUARY 15.—**Llantarnam.**—CONSTRUCTION OF SEWERS.—Constructing about 850 yards of 12 in., 9 in., and 6 in. stoneware and steel pipe sewers, with manholes complete, for the Llantarnam U.D.C., at Belle Vue-road. Mr. A. Gordon Jones, Engineer and Surveyor, Council Offices, Cwmbran. Deposit £2 2s.

JANUARY 15.—**Romford.**—SEWER.—Construction of about 680 yards of 15 in. and 420 yards of 12 in. diameter pipe sewer, &c., in the parish of Wennington, for the R.D.C. Mr. W. J. Grant, Surveyor, 16A, South-street, Romford.

JANUARY 16.—**Barrowford.**—ALTERATIONS TO SEWAGE WORKS.—Alterations and additions at the Sewage Works. (1) Comprises alteration of overflows and additional drains, humus tanks, sludge lagoons, pump-house, and appurtenant works. (2) Comprises sewerage ironwork, including sluice valves, penstocks, floating arms, and appurtenances, for the U.D.C. Messrs. Charles J. Lomax & Son, 37, Cross-street, Manchester. Deposit £3 3s.

JANUARY 16.—**Colwyn Bay.**—SEWERAGE WORKS.—Provision and laying of 8,000 yards of stoneware and cast-iron pipe sewers and rising main; also for the construction of manholes, pumping station, pump well, &c., for the U.D.C. Mr. Robert Green, 37, Bennets-hill, Birmingham. Deposit £5 5s.

JANUARY 16.—**Erith.**—SEWER.—Construction of a sewer in the Erith Marches, &c., for the U.D.C. Surveyor's Office, Bexley-road, Erith. Deposit £1.

JANUARY 16.—**Mitcham.**—ROADS.—Making-up of Jersey-road and Vectis-road, for the U.D.C. Surveyor, Broadway House, London-road, Lower Mitcham.

JANUARY 16.—**Newcastle-under-Lyme.**—CULVERT.—Construction of a three-foot barrel culvert in brickwork with concrete foundation, for the T.C. Mr. A. A. Pattison, Borough Engineer, Municipal Offices, Newcastle-under-Lyme. Deposit £2 2s.

JANUARY 16.—**Newcastle-under-Lyme.**—ROADS, &c.—Construction of roads and drainage works on Westlands Building Estate, for the T.C. Mr. A. A. Pattison, Borough Engineer, Municipal Offices, Newcastle-under-Lyme. Deposit £2 2s.

JANUARY 16.—**Reigate.**—ROADS.—For resurfacing West-street and part of Brighton-road with bituminous macadam or tarred slag macadam, for the T.C. Borough Engineer, Municipal Buildings, Reigate.

JANUARY 17.—**Birmingham.**—ROADS, &c.—Construction of road works and sewering on the Farcroft Estate, Handsworth, for the T.C. Mr. H. H. Humphries, City Engineer, The Council House, Birmingham. Deposit £1.

JANUARY 17.—**Birmingham.**—ROAD WIDENING.—For widening a part of Bournville-lane, a length of 780 yards, also for constructing a new subway and lengthening the existing subway from the Bournville works, for the T.C. Mr. Herbert H. Humphries, City Engineer, The Council House, Birmingham. Deposit £2.

JANUARY 17.—**Carlisle.**—ROADS.—Construction of (a) new roadway from Richardson-street to Cemetery Gates; (b) new roadway connecting Upperby-road with Blackwell-road, for the T.C. Mr. Henry C. Marks, City Engineer, 18, Fisher-street, Carlisle. Deposit 10s.

JANUARY 17.—**Harwich.**—ROADS.—For steam rolling and tar spraying, for the T.C. Mr. F. Harold French, Borough Surveyor, Harwich.

JANUARY 18.—**Southend.**—ROADS.—For making-up of Shaftesbury-avenue (Sec. 1) and Chelsea-avenue, for the T.C. Mr. Robert H. Dyer, Borough Engineer, Southend-on-Sea. Deposit £2 2s. each.

JANUARY 18.—**Southend-on-Sea.**—ROADS.—Making up, &c., new boulevard at Prittlewell Chase, for the T.C. Mr. R. H. Dyer, Borough Engineer, Southend. Deposit £2.

JANUARY 19.—**Beddington.**—ROADS.—Tarspraying 300,000 square yards of roads, for the U.D.C. Mr. S. F. R. Carter, Surveyor, Council Offices, Wallington.

JANUARY 19.—**Hereford.**—SEWAGE DISPOSAL.—Construction of screening, detritus and pump chambers, and reconstruction of the septic tanks at the Sewage Disposal Works, for the T.C. Mr. W. McNeil Shimmin, City Engineer, Town Hall, Hereford. Deposit £2 2s.

JANUARY 22.—**Cheadle.**—WATER SUPPLY.—Construction of works for the supply of water to Cheddleton, Caverswall (part) and Consall (part), for the R.D.C. Messrs. Willcox & Raikes, 63, Temple-row, Birmingham. Deposit £10 10s.

JANUARY 22.—**Loughborough.**—SEWERS.—Construction of storm water sewers in (1) Derby-road, Station-street, Paget-street, Leopold-street, Oxford-street, and Havelock-street; (2) Edward-street, Lisle-street, and Grange-street, for the T.C. Mr. A. H. Walker, Borough Surveyor, Town Hall, Loughborough. Deposit £2 2s.

JANUARY 22.—**Manchester.**—DRAINAGE WORK.—Execution of general contractors' and plumbers' work required in connection with the drainage of houses and other premises for twelve months, for the T.C. Mr. J. Irvine, Manager of the Drainage Branch, Public Health Department, Civic Buildings, 1, Mount-street, Manchester. Deposit £1 1s.

JANUARY 22.—**Wakefield.**—RE-SURFACING.—For remaking and re-surfacing of yards at County Hall and Central Stores, for the West Riding C.C. West Riding Architect, County Hall, Wakefield.

JANUARY 23.—**Blackall Mill.**—TAR PAVING.—For tar paving of playgrounds for the Durham C.C. Mr. F. Willey, F.R.I.B.A., 34, Old Elvet, Durham.

JANUARY 23.—**Bredbury.**—ROADS.—Making-up Lyndhurst-avenue and adjacent passages, Bredbury, for the U.D.C. Mr. Albert Plunkett, Surveyor, Council Offices, George-lane, Bredbury.

JANUARY 23.—**Castle Side.**—TAR PAVING.—For tar paving of playgrounds for the Durhan. C.C. Mr. F. Willey, F.R.I.B.A., 34, Old Elvet, Durham.

JANUARY 23.—**Ilford.**—DRAIN.—Construction of 36 in. diameter concrete tubes and cast-iron pipes from the outfall works at Water-lane to the River Thames, for the U.D.C. Mr. H. Shaw, Town Hall, Ilford. Deposit £2 2s.

JANUARY 23.—**Liverpool.**—FILTER BEDS.—Construction of three filter beds, &c., at Oswestry, for the T.C. Water Engineer, 55, Dale-street, Liverpool. Deposit £5 5s.

JANUARY 24.—**London.**—WATER MAIN.—Construction of water main from Westminster Bridge-road to Vine-street, for the Metropolitan Water Board. Mr. Henry E. Stilgoe, Chief Engineer, 173, Rosebery-avenue, E.C.1. Deposit £20.

JANUARY 25.—**Shaftesbury.**—WATER SUPPLY.—Construction of waterworks for supply to East Stour and Buckhorn Weston, for the R.D.C. Five sections. Messrs. A. P. I. Cotterell & Edson, 17, Old Queen-street, Westminster, S.W. Deposit £3 3s.

JANUARY 26.—**Hitchin.**—WATER MAIN.—For providing and laying water mains for Codicote and Rabley Heath, in the parish of Codicote, for the R.D.C. Mr. A. E. Passingham, Clerk, Offices, Hitchin. Deposit £2 2s.

JANUARY 27.—**Harrogate.**—SEWERS.—Duplication of two inverted cast-iron syphons on the south main outfall sewer, including the provision and laying of about 816 yards of 21 in. and 902 yards of 24 in. cast-iron pipes, for the T.C. Mr. C. E. Rivers, Borough Engineer, Municipal Offices, Harrogate.

JANUARY 30.—**Dover.**—ROADS.—For new wood paving works, new surface water main and incidental works, London-road, for the T.C. Mr. Wm. Boulton Smith, Borough Engineer, Maison Dieu House, Dover. Deposit £2 2s.

JANUARY 31.—**Alnwick.**—ROADS.—For providing and laying materials on highways, for the Glendale R.D.C. Mr. F. J. Ellacott, Highway Surveyor, Wooler.

FEBRUARY 1.—**Llanharan (Glam).**—SEWERAGE WORKS AND SEWAGE DISPOSAL WORKS.—For works as follows, for the Cowbridge R.D.C., in connection with the Llanharan Sewerage Scheme: (a) To provide and lay about 2,500 yards of 15 in. dia. cast iron pipe outfall sewers. Lay and provide 600 yds. of 12 in. drain cast iron pipe sewers, with manholes, storm water overflow, ventilating shafts and appurtenant works; and (b) the construction of sewage disposal works consisting of grit-pit, detritus, equalising, storm water, liquefying, and humus tanks, dosing chambers and filters, sludge lagoons, access road, and the building of office and stores and other appurtenant works. Messrs. Thomas & Morgan & Partners, civil engineers, 23, Gellywasted-road, Pontypridd. Deposit £10 10s.

FEBRUARY 5.—**Gravesend.**—SEWERS.—Construction of a main outfall effluent sewer into the River Thames, for the T.C. Mr. Frederick T. Grant, 4, Woodville-terrace, Gravesend. Deposit £1.

FEBRUARY 8.—**Newton Abbot.**—ROADS.—Laying mastic felt asphalte in various streets, for the U.D.C. Mr. C. D. White, Surveyor, Town Hall, Newton Abbot. Deposit £2 2s.

NO DATE.—**Otley.**—DRAINS, &c.—Laying 1,000 yds. of 4 in. and 6 in. drains, building manholes, and outfall works, at Leathley, near Otley, for Mr. F. H. Fawkes, M.P., Messrs. Jones & Stocks, architects, 5c, Prudential Buildings, Leeds.

NO DATE.—**Rosyth.**—SEWERS, &c.—For sewer and road work, Rosyth. Architect, Scottish National Housing Co., Ltd., Park-gate, Rosyth, Dunfermline.

Competitions.

(See Competition News, page 74.)

Auction Sales, Tenders, etc.

JANUARY 23.—**Bellingdon (Bucks).**—Messrs. Frank G. Bowen, Ltd., will sell, at the London Auction Mart (Room M.), 155, Queen Victoria-street, E.C. 4, by order of the mortgagees, the freehold and small part copyhold land, brickworks, buildings and equipment, known as Bellingdon Brickworks, Bellingdon (three miles from Chesham, Bucks), 12 acres, 37 perches. Auctioneers, 62A, Aldersgate-street, E.C. 1.

✱JANUARY 25.—**London, S.W. 1.**—Messrs. Goddard & Smith will sell, in the Estate Auction Hall, 22, King-street, St. James's, S.W. 1, with vacant possession, No. 68, Pall-mall, S.W., one of the finest positions in Clubland, adjoining Marlborough House. Auctioneers, 22, King-street, St. James's, S.W. 1.

✱FEBRUARY 6.—**Ewell (Surrey).**—Messrs. Hampton & Sons will sell, at the St. James's Estate Rooms, 20, St. James's-square, S.W. 1, important freehold building land. Auctioneers, 20, St. James's-square, S.W. 1.

Public Appointments.

JANUARY 13.—**Bucks.**—Temporary Junior Assistant required by the County Council. Mr. C. H. Riley, County Architect, Education Sub-Office, Aylesbury.

JANUARY 15.—**Watford, Herts.**—Clerk of Works required by the Committee of the Watford and District Peace Memorial Hospital. Hon. Treasurer, Lyndale, Upton-road, Watford, Herts.

✱JANUARY 16.—**Sutton (Surrey).**—GENERAL FOREMAN.—General foreman required by the U.D.C., with knowledge of road-making, maintenance and repairs, sewering, also house-building trades. Mr. Harry Bolton, Clerk to the Council, Municipal Offices, Sutton, Surrey.

JANUARY 20.—**Norfolk.**—County Surveyor required for the County of Norfolk. Applicants must have had experience of modern methods of bridge and road making and repairs, maintenance of County Buildings, and the organisation of a Local Road Authority. Mr. H. C. Davies, Clerk to the Council, Shirehall, Norwich.

✱JANUARY 22.—**Frimley.**—Architect required to design and carry out additional housing schemes, comprising 20 houses, for the Frimley U.D.C. Applications, marked "Architect," to Mr. F. T. S. Marsh, Clerk to the Council, Municipal Buildings, Camberley.

✱NO DATE.—**Tanganyika Territory.**—Quantity Surveyor required by the Government of the Tanganyika Territory. Crown Agents for the Colonies, 4, Millbank, London, S.W.1. quoting M/11776.

Calendars for 1923.

In addition to the calendars for 1923 noted in our last issue we have received the following: From Messrs. W. H. Willcox & Co., Ltd., of 38, Southwark-street, S.E. 1, a one-page per month wall calendar; from the Ragusa Asphalte Paving Co., Ltd., 25 & 27, Oxford-street, W., a wall calendar with a pad containing tear-off slips—one for each day—with the date in large type; from Messrs. Edward Wood & Co., Ltd., constructional engineers, of Trafford Park, wall calendar with a tear-off page for each month; and from the Brightside Foundry and Engineering Co., Ltd., of Sheffield, London, &c., a wall calendar on stiff card with tear-off-each-month slips and a picture in colour of a pioneer in the frozen north (or south?) enjoying the warmth thrown out from a primitive method of heating—a fire in a bucket. Mr. Lewis E. Nunn, builder, decorator and sanitary engineer, of 431, Edgware-road, W. 2, Messrs. E. B. Holmes & Co., Ltd., builders and contractors, of 155, Mare-street, Hackney, E. 8, and Mr. E. Parkinson, slate and tile merchant and roofing contractor, of 176, Philip-lane, South Tottenham, N. 15, have each issued calendars in which an attractive picture is the main feature; these represent respectively (1) a lithographic reproduction of "The Final Touch," by W. H. Margetson, R.I., R.O.I.; (2) "The Willing Captive," by Hy. Ryland, R.I. (in colour); and (3) "A Distinguished Visitor," by A. D. McCormick (in colour).

We have also received an attractive calendar from Messrs. Thompson Bros., 31, Staines-road, Hounslow.

PROPOSED NEW BUILDINGS & OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ABERDEEN.—Plans approved:—Shop front at 24, Chapel-street, for Mr. David Ogilvie, plumber, per Messrs. Wilson & Walker, architects; house, Queen's-road, at Granitehill, for Mr. George T. M'Donald, engineer, per Mr. George Watt, architect; fish packing sheds, lane off South Esplanade (West), for Mr. James Fraser, contractor, per Mr. George Watt, architect; fish-curing premises, lane off South Esplanade (West), for Mr. James Walker, fisherman, per Mr. George Watt, architect; garages and stores, Mealmarket-street, for Mr. George Bothwell, grain merchant; shop, Oscar-road, for Robert Coulter's Westfield Dairy, Ltd., per Messrs. Sutherland & George, architects; biscuit factory, Seaforth-road, for Mr. James Milne, baker, per Mr. John Milne, architect.

ABERTILLERY.—The U.D.C. has decided to commence immediately the widening of Crumlin-road near the Royal Oak, Llanhilleth. The scheme to be put in hand is estimated to cost £4,750.

ALNWICK.—The R.D.C. has passed plans for four houses in Sun Inn-lane, Warksworth, for Messrs. J. G. Green & Sons.

AMMANFORD.—Plans have been submitted to the U.D.C. for the new Post Office to be erected at a cost of from £15,000 to £20,000. The Council has decided in favour of building a new road from Pontadulais to Pontyffynon, a scheme proposed for joint action by the Swansea R.D.C. The Ministry of Health has notified the Council that it will sanction a loan for the building of additional houses by the Council.——The U.D.C. has passed a plan of the proposed new post office on a site in Quay-street. It was stated that the building as proposed would be of a very creditable character, and would cost from £16,000 to £20,000.

ARDROSSAN.—The T.C. has agreed to proceed with a housing scheme at Parkhouse, the plans of which have been approved by the Board of Health. Twenty houses will be built, fourteen of four apartments and six of five apartments.

BARNET.—Plans have been approved by the R.D.C. of additions to Radnor Hall, Elstree, a bungalow at Well End, near Potters-lane, for Mrs. Marsh, and a shop in London-road, Shenley, for Mr. Phillips.—The Council has decided to erect 34 houses at Boreham Wood and Elstree.

BATH.—Plans passed by T.C.: Shop and dwelling house, 34A, Coronation-avenue; alterations, 1 and 2, Bridge-street.

BIRKENHEAD.—Plans passed by T.C.:—Alterations to picture house in course of erection in Church-road, near Well-lane; conversion of 148, Chester-street into a dwelling-house and shop; garage, 27, Ashville-road; alterations to lock-up shops, 50 and 52, Market-street; garage in rear of dwelling-house, No. 5, Grosvenor-place; additions to Nurses' Home and for the construction of a covered way between Blocks B and D at the Birkenhead Institution, Church-road.

BIRMINGHAM.—In accordance with the policy sanctioned by the Birmingham City Council last October, contracts have already been placed for a large number of houses. The Public Works Committee have entered into agreements in regard to 140 new houses at Alum Rock, and 180 on the Farcroft Estate at Handsworth. It is now proposed to invite tenders for 212 houses on the Billesley Estate at Yardley Wood. The dwellings will be of the non-parlour type, and will be erected under five contracts.

BLACKBURN.—Plans passed by T.C.:—House, Meins-road, by Mr. H. Haydock; house, Juniper-street, by Messrs. Penny Bros.; additions, 46, Preston New-road, by the Trustees of St. George's Presbyterian Church; house, Bolton-road, by Messrs. Ball & Holroyd.

BOLTON.—Plans passed by T.C.: Mr. Charles Nightingale, bungalow, Belmont-road; Mr. Holden, additions, "Eagley Bank," Andrew-lane; Messrs. Leigh Bros., Ltd., eight houses, Stratford-avenue; Messrs. Jackson & Bro., Ltd., extension to boiler shop, Wharf Foundry; Messrs. J. Robinson & Co., extension to works, Chulsey-street; Mr. R. W. Partington, garage, &c., 25, Bromwich-street; Mr. Percy Farnworth, bungalow, Wheatfield-street; McCreath, Taylor & Co., tar macadam plant and shed, Mayor-street-yard; Messrs. J. Marsden & Co., Ltd., filter house, Burnden Bleachworks; Health Committee, for public baths and Bolton Corporation washhouses, Moss-street; Mr. C. F. Kenyon, additions, Swan Hotel.

BOURNEMOUTH.—Plans passed by T.C.: Alterations, 110, Old Christchurch-road, Messrs. Barratt & Co., Ltd.; alterations and additions, "Marley," corner Velle Vue and Marine roads, Dr. Vivian; conversion of store into house, Wolverton-road, Mr. G. Rogers; alterations and additions, "Lustleigh," Westby-road, Mr. J. J. Kingston; additions, 83, Kimberley-road, Mrs. Stevens; house, corner Talbot and Berkeley roads, Mr. A. Barnes; alterations and additions, corner Southbourne-road and Pine-avenue, Messrs. Cook & Newman; additions to house, Howard-road, Mr. E. H. Walley; alterations and additions, "Pinecliffe Hotel," Seabourne-road, Messrs. J. Groves & Sons, Ltd.; additions, corner East-avenue and Kinross-road, Mr. A. Barnes; two bungalows, Charminster-avenue, Messrs. E. M. Drewitt & Co.; garages, Beresford-road, Mr. S. M. Gibbs; workshops and office, Darracott-road, Mr. J. C. Drewitt; house and garage, Penrith-road, Mr. C. G. Westman; house, East-avenue, Mr. A. D. Lambert; house and garage, Stirling-road, Mr. R. J. M. Nabney; two flats, Bryanstone-road, Mr. H. T. Welsh; additions, 177, Richmond Park-road, Miss Sheffield; house, Talbot-road, Mrs. M. B. Castle; seven houses, Oates-road, Mr. S. Gidlow; house, 36, Newstead-road, Mr. J. Scott; house, Heatherlea-road, Mr. H. B. Mudge; house, Seaward-avenue, Messrs. Burridge & Freeman; house, Southern-road, Messrs. Bunning & Patrick; two houses, Stourcliffe and Southwood avenues, Mr. R. J. M. Nabney; two houses, Withermoor-road, Mr. S. Harris; house, Alyth-road, the Misses Higson; house, Kinross-road, Mrs. E. M. Blake; office, 329, Christchurch-road, Mr. W. H. Castle; house, Stourcliffe-avenue, Mr. G. Newman; house, corner Stourcliffe and Pine avenues, Mr. G. H. Cooper; house and garage, Pinecliffe-avenue, Mr. E. R. Saunders; house, Queen Mary-avenue, Mr. Case; house, Bloomfield-avenue, Mr. B. Miller; two houses and garages, Cecil-avenue, Mr. A. Harris; house, East-avenue, Messrs. G. E. & W. R. J. Lambert; semi-bungalow, Stamford-road, Mrs. C. Hayden; two houses, Seaward-avenue, Messrs. Burridge & Freeman; two houses, Stourcliffe-avenue, Mr. G. Newman; house, corner Queen's Park-avenue and Howard-road, Major C. Hardaker; four houses, Elmes-road, Mr. J. Jones; house, Southern-road, Mr. G. Grant; house, corner Seafield and Tuckton roads, Messrs. Lawrences; house and garage, Seafield-road, Mr. A. H. Jackson; two houses, Glenmore-road, Mr. G. Dolman; house, Castlemain-avenue, Mr. G. Smith; house, corner Beechwood and Chessel avenues, Mrs. C. Cumming Dewar; alterations and additions, "Moorfield," Bodorgan-road, Colonel Strachan; house, Glenmore-road, Mr. R. Shanks; house, Heathwood-road, Messrs. Hawkins Bros.; conversion into flats, 69, Fitzharris-avenue, Mrs. Laney; dry cleaning premises, Stourvale-road, Messrs. Ralph Wild & Co.; house, corner Charminster-avenue and Sutton-road, Messrs. E. M. Drewitt & Co.; garage "Cliff Cottage," corner Southbourne Overcliffe-drive and Boscombe-road, Mr. B. Christie; house, Harewood-avenue, Mr. A. Midgley; house, Methuen-road, Messrs. Ellison, Son, & Dale; house, Harewood-avenue, Mr. A. N. Hardy; additions, 17, Beaufort-road, Mr. J. B. Allison; garage "Southcliff," Southcliff-road, Mr. R. Duncan; house, St. Luke's-road, Mr. F. W. Newey; house, Penrith-road, Mr. J. Newbury.

BO'NESS.—The Scottish Board of Health have allotted the local authority 14 additional houses, making 70 in all, under the State-aided scheme. Plans have been passed for the erection at Hope-street of shops and a large hall above.

BRADFORD.—The Tramways Committee recommends that application be made to the Ministry of Transport for sanction to borrow £85,500 for the erection of an extension of the Thornbury car depot and workshops in accordance with estimates prepared by the city architect and the tramways manager.

BUILTH WELLS.—The U.D.C. is to confer with the Colwyn and Builth R.D.C.s on the question of providing an infectious disease hospital.

BUXTON.—Plans passed by T.C.:—House in Green-lane, for Mr. J. E. Shirt; packing shed in South-avenue, for Messrs. A. and C. S. Ball.

CANVEY ISLAND.—The Essex C.C. proposes to erect a new school at an estimated cost of £3,800.

CARDIGANSHIRE.—A sub-committee of the County Council has been appointed to go into the question of making grants to the Aberystwyth R.D.C. toward the erection of bridges estimated to cost £3,000. The Main Roads Committee of the county (south division) has decided to consider the question of building a light railway from Aberporth to Llanarth. It was stated that local contribution toward cost would be 40 per cent. and that remainder was expected from Government and county grants.

CARLISLE.—The Health Committee has passed plans, presented by Messrs. White & Stephenson, architects, Newcastle, on behalf of Mr. J. Dobson, Newcastle, for a new picture hall in Botchergate.

CHESTERFIELD.—Plans passed by T.C.: two houses, Walgrove-road, for Mr. S. Wheatcroft; alterations to premises, Chatsworth-road, for the Chesterfield & District Co-operative Society, Ltd.; garage, Hasland-road, for the executors of the late W. Hoole; cottage, Chatsworth-road, for the Brampton Brewery Co., Ltd.; two houses and shops and two houses, Sheffield-road, for Mr. F. Holmes; assembly hall and class rooms, Kent-street, Hasland, for the Hasland Baptist Mission; house, Handley-road, New Whittington, for Mrs. Merrick; two lock-up shops, Hollis-lane, for Mrs Martin Craven; house, Boythorpe-road, for Mr. Allsop; two houses, Penmore-street, for Mr. O. M. Randall; shop front and new elevation to premises in Burlington-street, for Messrs. A. Davy & Sons, Ltd.; additions to cottage, Little Common, for Dr. McCrea.——The justices have passed plans for alterations at the "King and Miller" Inn, for the Chesterfield Brewery Co.

COALVILLE.—Plans passed by U.D.C.:—House, Forest-road, Coalville, for Mr. F. Bott; house, Meadow-lane, Whitwick, for Mrs. G. Wright.

CUCKFIELD.—The U.D.C. has passed plans for eight houses at Tylers Green, for Mr. Turner.

DEWSBURY.—Plans passed by T.C.:—Yorkshire Electric Power Co., transformer stores and test house, Calder-road; Mr. E. Howgate, two houses, Birkdale-road; Mr. J. Crossley, jun., ten houses, South-street; Mr. J. Summerscales, two bungalows, Leeds-road; Mr. G. A. Barrowcliffe, conversion of offices into house, Tanhouse Chemical Works, Ravensthorpe; Mrs. Fegan, alterations, "Man and Saddle" Hotel; Mr. W. P. Cooper, additions to Hawthorne Villa, Warren-street, Savile Town; Mr. J. Brook, addition to shop, Wakefield-road; Messrs. Newsome & Spedding, shed and offices, Aldams Mill; Messrs. Eggleston & Son, alterations to shop, Daisy Hill.

EDINBURGH.—The Dean of Guild Court has granted warrants for the erection of two semi-detached villas at Charterhall-road, to Mr. H. B. Williamson; for two similar houses at Lasswade-road, Liberton, to Mr. Simon Keppie; and for a further two at Corstorphine to Mr. D. M. Duncan. Permission was granted to Miss Wakeham for the erection of a bungalow dwelling house at Hillview-terrace, Corstorphine, and to Mr. Andrew Gibb for the subdivision of a house at 7, Grosvenor-crescent, into three dwellings.

FALKIRK.—The T.C. has approved of an improvement scheme to deal with an insanitary area, estimated to cost £147,000, with a view to obtaining a Government grant.

GELLYGAER.—The U.D.C. has decided to build houses on alternate sites to the Fochriw site if the Ministry of Health will not make grants for building on that site.

GIRVAN.—Plans for a big extension scheme of the King's Arms Hotel, lately acquired by the Girvan Hotels Company, Ltd., have been passed by the Dean of Guild Court. The cost of the extensions will be considerably over £5,000.

GOOLE.—The U.D.C. has given approval to a scheme for increasing the pumping capacity of the Waterworks at Pollington, and the erection of a new water tower at Goole, with a capacity of 770,000 gallons.

HULL.—Plans passed by T.C.: W. Garbutt, three houses, Heathcote-street; J. E. Wray, two houses, Newland-park; A. Johnson, two houses, garages, &c., Cottingham-road; A. H. Evans, four houses and shops, Holderness-road; E. Whitlock, shop, workshop, &c., Hessle-road and Monmouth-street; R. Steel, lock-up shop, Courtney-street; E. Grocock, workshop, Portobello-street; J. Millard, two shops, Middle-street; F. Hakeney, lavatories, &c., "Fulford Rooms," Beverley-road; Barton's Seed Crushing Mills, Ltd., reconstruction of mill, Stoneferry; Moor's & Robson's Breweries, Ltd., barley store, Raywell-street and Mariborough-terrace; The Savoy Super Cinema Co., cinema, Holderness-road and Morrill-street; The Paragon Syndicate, Ltd., shops, offices, &c., Jamesonstreet; T. Linsley & Co., Ltd., additions, 145, Anlaby-road; L. H. Beal, workshops, lock-up shops, offices, &c., Clarence-street and Naylor's-row; C. Parish, show-room, Anlaby-road; Ellis & Taylor, shed, 157, Newland-avenue.

ILFORD.—Plans passed by U.D.C.: Tupper Bros., shop at 11, The Promenade; F. W. Hitchcock, two shops, Aldborough-road; P. E. Brand, 13 houses, 1-25, Gearlesville-gardens, and road and sewers, Brandville-gardens; J. W. Lohden, school, Mansfield-road; R. Mapley, lock-up shop, Belgrave-road; P. E. Brand, two houses, 18-20, Gearlesville-gardens; W. J. Cearns, Church Institute, Haydon-road.

ILKESTON.—Plans passed by T.C.: Park-road garage, Market-street, Hallam.

JOHANNESBURG.—The Office of H.M. Trade Commissioner in South Africa reports that the largest footwear dealers in South Africa have purchased an important site in Johannesburg with an area of 10,000 sq. ft., for the erection of a warehouse. Plans are in course of preparation by the architects, and it is hoped that building operations will commence shortly. United Kingdom firms interested in the supply of building and constructional materials may obtain the name and address of the architects and the firm on application to the Department of Overseas Trade, 35, Old Queen-street, London, S.W.1.

LEEDS.—The Watch Committee has approved of the following plans, so far as it is concerned: Meanwood Entertainments Syndicate, picture-house, ball-room, nine lock-up shops, &c., Green-road, Meanwood; New Gallery Co., four film-rooms and alterations, South-parade; Mr. F. Fornsworth, picture house and nine lock-up shops, Chapeltown-road.—A further step towards the provision of adequate housing accommodation will be taken by the scheme under which the late Mr. W. R. Sutton, of the firm of Sutton & Co., general carriers, left a large sum to be applied to the building of model dwellings in various parts of the country. A site of 20 acres has been acquired provisionally from the Leeds Corporation on the White Bridge Farm estate. The whole estate, which comprises 30 acres, purchased for £3,750, from the Hon. E. F. L. Wood, is on the east side of York-road. There will be provision for about 240 houses or tenements suitable for the needs of poor people. Both the scheme and the site have been approved by the Ministry of Health, and application will be made at an early date for the sanction of the Court of Chancery.

LIVERPOOL.—A sum of £400,000 is to be expended by the Corporation on the provision of new abattoirs. They will be amongst the largest in the world, and are to be erected on the site of the Stanley Cattle Market.——We understand that the Corporation have passed plans for the new Woolworth building to be erected on the pro-Cathedral site. Mr. W. Priddle, the Co.'s architect, prepared the designs.——Plans passed by the Corporation: Lyndoch-street, Thomas Nelson, garage and cartshed; 51-53, Bostock-street, J. Williams, additions; 128, Everton-road, A. F. Jones, small extension; 308, Upper Parliament-street, M. Monk, extension; Sinclair-street, Garston, Pure Cane Molasses Co., Ltd., pump-house: King-street, Garston, Pure Cane Molasses Co., Ltd., coopers' workshop; 52, Marlborough-road, Tuebrook, Capt. Clark, conversion of stable to garage; 89, Bold-street, Clay & Abraham, alterations; 1, Blundell-street and 14, St. James-street, Peter Walker & Sons, Ltd., alterations; "Wyncote," Allerton-road, Liverpool University, store and shelter; 6, Oakfield-road, H. Dumbell, garage; 62, Langham-street, E. O'Neill, stable; 14, Croxteth-grove, H. Gidkin, garage; Sandfield Park, The Old Hall, A. E. Shennar, addition to Badminton court; 53, Ellerslie-road, W. S. Lloyd, garage; 141, Upper Warwick-street, Pierce Williams & Son, garage; Queen's-drive, Walton, Jones & Hughes, 4 houses; 45, Rodney-street, Rodney Estate, Ltd., conversion flats; Dryder-

* See also our List of Contracts, Competitions, etc.

street, W. & R. Jacobs, Ltd., conversion of stable to garage; 16-20, William Moult-street, C.M.W. Motor Co., garage; Cheery-lane, J. Fisher, two new shops; Quay-street, Woolton, George Morrell, conversion of outbuilding into cottage; Paradise-street, The Surveyor, Corporation of Liverpool, Seaman's Dispensary and keepers' houses; Cherry-lane and Appleton-road, W. T. Lancashire, conversion of stable into garage; St. James' Close, T. H. Owen, bungalow; Olive-lane, Mrs. Madden, conversion of stable into garage; Ranelagh-drive, Mr. Jones, garage; Hillfoot-road, Mrs. Remer Smith, house and garage; Stewart's-avenue, Hunt's Cross, Griffith, Sons & Thornwell, Ltd., two houses; Garston Old-road, H. J. Thomas, house, &c.; 16, Bartley-road, J. Moore, garage; Queen's-drive, J. W. Jones, house and garage; Overton-street, J. Bennstein, bakehouse and stores; Tithebarn-street, W. H. Smith & Sons, new building, shop and showrooms; Hall-lane, J. Townsend, house and conversion into flats.

LLANDILO.—The Surveyor reported to the Council that he understood that the National Provincial Bank intends to immediately put in hand the erection of premises in Rhoswain-street.

LLANELLY.—The Llanelly Harbour Commissioners have decided to ask for Government grant in the cost of extending the North Dock sidings providing a number of the unemployed are absorbed in the work.

LONDON.—The suggestion for an East-End memorial to the late Father Bernard Vaughan, has already taken form. A site for the erection of a Catholic central school in a central position in the district was secured some time ago by a committee of rectors of eleven Catholic parishes in that part of London, and upon this it is now proposed to erect St. Bernard's Central School, as a memorial.

LONDON (HACKNEY).—Plans passed by B.C.:—Massey, Morgan & Shearley, two shops, 138, Upper Clapton-road; M. Barrett, alterations at The Pyrene Co.'s premises, Northwold-road; A. J. King, Ltd., garage, stores, &c., 55, Downham-road; H. Bradford & Sons, one-story factory, Somerford-grove; R. J. Lovell, four shops, Mare-street; C. Stannett, addition, 274, Stamford-hill.

LONDON (HAMMERSMITH).—Drainage plans passed by B.C.: 212, Hammersmith-road, for R. Murray & Son; 10, 11, and 12, Argyle-place, for Beale & Capps; 300, Goldhawk-road, for R. J. Harmon; "The Angel," King-street, for N. Parr; New Hudson Motor Works, Dordrecht-road, for W. Mills & Sons; 41, Brook Green-road, for L. Leeder & Co.; 144B, Sinclair-road, for W. Jenning. & Co.; 34, Ravenscourt-gardens, for L. & S.W. Rly. Co.; 26, Ravenscourt-gardens, for L. & S.W. Rly. Co.; No. 20 Arch, The Grove, for C. H. Look; 180, King-street, for H. J. Whitman & Sons.

LONDON (SOUTHWARK).—Drainage plans passed by B.C.: W. C. Le Maitre to Malham's-yard, Great Dover-street; Harding & Williams, to 46, Blackfriars-road and Meymott-street; John Warden, to the London Metal Warehouses, Hill-street.

LONG EATON.—The U.D.C. has instructed its architect to prepare plans for twenty more houses of the non-parlour type.

MAESTEG.—The U.D.C. is to undertake the widening of Caerau main road, near G.W.R. bridge-crossing and near Cymmer-hill. The widening of Picton-street is also to be undertaken.

MANCHESTER.—The Town-Planning Committee has decided to proceed with the construction of proposed new roads from Moston-lane to Greengate, Chadderton, and from Moston-lane to Bower-street. These two roads are estimated to cost £266,900, of which sum the Ministry of Transport will contribute 50 per cent.

MERTHYR TYDFIL.—The Public Works Committee has decided to purchase a steam-roller, estimated to cost £1,000 approximately.

MYNYDDISLWYN.—The Council has conferred with the agent and architect of the Aberconway Estate in the matter of improving roads at Oakdale. It has been decided to widen and improve the Blackwood-road. It has been decided to proceed with the erection of an additional 70 houses as soon as possible.

ORSETT.—The Ministry of Health has approved of the proposed extension of the Nurses' Home by the R.D.C.

OXFORD.—Plans passed by T.C.: Miss E. J. Clarke, Havering House, St. Clement's-street, house, north-east side of Hill-top road; R. Gas, 52, Kingston-road, house, Hamilton-road; Messrs. Greenings, Randolph-street, Cowley-road, workshop, Randolph-street; the Sister Superior, Manor House, Holywell, addition to St. Basil's Home, Iffley-road.

PEMBROKE DOCKS.—The Pater Ward Committee has decided to widen and improve the two main streets, Milton-terrace and Upper Park-street. An estimate for the improvement of Lower Lamphrey-road at £602 has been submitted to the Council and approved.

PENYBONT.—The R.D.C. is to erect further houses at Pencoed.

PONTYPRIDD.—The surveyor has submitted plans for the laying-out of the public park and the following works are to be put in hand immediately: Making of three bowling greens at £400 each; work in preparation of bowling green and tennis court sites estimate £500; approach roads, £1,000; children's ground, lay-out £350; other works, £100; total immediate expenditure, £3,150. In addition, a bridge from the Park Hotel to grounds at estimated cost of £400 is to be constructed. Plans of bridge and approach have been called for.

PORTHCAWL.—The U.D.C. has decided to erect public conveniences in John-street.

ROTHERHAM.—The Rotherham West Riding Bench have sanctioned plans for alteration to the licensed premises of the "Sportsman Inn," Broad-street, Parkgate.

SCARBOROUGH.—Plans passed by T.C.: House in Oriel Bank, for Mr. E. Fletcher.

SELKIRKSHIRE.—Selkirkshire Education Authority have approved of plans for the erection or extension of four schoolhouses at Redfordgreen, Deiglieish, Mountbenger, and Blackhaugh, at a total estimated cost of £2,500.

SOUTHPORT.—The T.C. has decided to expend £4,300 on improvements in connection with Victoria Park. Of this, £2,800 is for extensions and alterations of the sports pavilion and refreshment rooms.

STAINFORTH.—Plans have been approved for the erection of 220 houses, part of a scheme of 1,000 houses, by the Hatfield Main Colliery Co., at Stainforth.—A site has also been acquired for the erection of a Prmitive Methodist Chapel.

STONE.—Additions, comprising three classrooms, cloakroom, &c., are to be made to the Alleyne's Grammar School.

SWINDON.—Plans passed by T.C.: Mr. R. J. Beswick, garage, rear of 26, Islington-street; Mr. A. J. Colborne, twenty-three dwelling-houses, Plymouth-street.

TONBRIDGE.—Three cottages for U.D.C. employees are to be erected in the Castle grounds.

TORPOINT.—The U.D.C. gives notice of its intention to construct a water reservoir, &c.

TREDEGAR.—The Council Surveyor submitted an estimate of £1,000 for repair damage to house property caused by floods. He was instructed to submit, with estimates, a scheme for work necessary to avoid damage by future flooding. Plans submitted by Mr. A. F. Webbe, architect, for alterations and extensions to Cottage Hospital were approved.

UPMINSTER.—Plans have been approved for a new hall to be erected at the rear of the Congregational Church, Station-road, and it is anticipated that the work will be commenced early in the New Year.

UPPER RENFREWSHIRE.—Plans passed by Buildings Committee: Two bungalows at Caroiside-avenue, Clarkston, for John M'Callum, Muirend, Cathcart; three self-contained bungalows, of five, six, and seven apartments, at Kilmarnock-road, Giffnock (South), for George W. Dixon & Sons, builders, Giffnock; semi-detached bungalows, each house of six apartments, at Tinto-road, Hillpark, for Philip Tomasson, builder, Motherwell; workshop for chemical purposes at Linwood-road, Eldersile, for the Paisley Chemical Company there; self-contained bungalow of six apartments at Seaton-avenue, Giffnock, for J. & J. Dixon, builders, Giffnock; three semi-detached cottages (six houses), each of six apartments, at Tinto-road, Hillpark, for Wm. Nicol, c.o. Whyte & Galloway, 121, Bath-street, Glasgow; nine self-contained bungalows, four of six apartments and five of five apartments each, at Melfort-avenue, Giffnock, for John Taylor, builder, Giffnock; two semi-detached bungalows, four houses, each of five apartments, at Whitecraigs, for James Garvey, 283, Cathcart-road, Glasgow; self-contained villa of eight apartments at Elphinestone-road, Whitecraigs, for Mrs. L. R. Ednie, Netherhaugh, Whitecraigs, and golf club-house at Bonnyton Moor, Eaglesham, for J. S. Lindsay, 29, King's Park-avenue, Cathcart.

VAYNOR.—The Breconshire Quarter Sessions has granted permit to the Vaynor and Penderyn Council to divert the highway leading from Cefn Coed to Blue Pool, Pontsarn. The road will be improved by widening, and by being taken over a shorter route.

WARRINGTON.—The Corporation is applying to Parliament next session for powers to borrow £1,350,000 for the construction of additional waterworks.

WEDNESBURY.—Sketch plans for the adaptation of Wood Green Lodge as a secondary school for boys were adopted at a meeting of Staffordshire E.C. The plans showed accommodation for 116 boys in six class-rooms with a lecture room for 30, masters' room, library, staff room, cloakroom, lavatories, &c., also the erection of a new building on the site to be used as a chemical laboratory.

WHITBY.—At the meeting of the U.D.C. approval was given to the scheme prepared by the surveyor for the improvement, development and laying-out of the Spa, at an estimated cost of £7,000.

WORTHING.—Plans passed by T.C.: House, Grand-avenue, F. I. Fuller, for D. Griffin; shop and workshop, Southfarm-road, for B. J. Blaker; four houses, Pavilion-road, for W. G. Tree; house, Wallace-avenue, B. J. Blaker, for W. G. Boxall; two houses, Ladydell-road, J. E. Lund, for Butler Bros.; house, Grand-avenue, J. E. Lund, for E. Hawkins; four houses, R. R. W. Hyde for G. or E. Hawkins; four houses, Longfellow-road, R. R. W. Hyde, for G. Baker & Sons; office, Southcourt-road, J. E. Lund, for Broadbent & Stephens; house, Wallace-avenue, B. J. Blaker, for B. Andrews; house, Ladydell-road, H. Milburn Pett, for E. Burton; house, Cissbury-road, W. H. Overton, for W. E. Green.

YORK.—The Ministry of Health has sanctioned the raising of loans by the Corporation as follows. Alterations at Fairfield Sanatorium, including nurses' quarters and stockman's cottage, £2,902; furnishings and ambulance, £836.—Married men's quarters are to be completed in connection with the Fire Station.—The Housing Committee recommend the Corporation to advertise for tenders for thirty additional houses of the parlour type, to be built on Tang Hall Estate, and to sell some building sites at Acomb.

FIRES.

BRADFORD.—Damage estimated at over £100,000 has been caused by fire at the premises of Messrs. M. Adams & Co., stuff and woollen warehousemen, in Leeds-road.

DARWEN.—A destructive fire has occurred at the Northern Box Co.'s works, causing damage to the extent of £9,000.

GLASGOW.—An outbreak of fire has occurred in a three-story brick building at 19, Moncrieff-lane, Glasgow, occupied by Messrs. John Boyd & Sons, bedding manufacturers.

LLANDUDNO.—A serious fire has occurred on the premises of Arthur's Pioneer Stores, in the centre of Mostyn-street, owned by Mr. Arthur Williams.

PENTRE (RHONDDA).—The engineering sheds of the Rhondda Engineering Co., at Lewis-street, Pentre, have been destroyed by fire.

PORT TALBOT.—The garage of Messrs. Turningly & Harris, Talbach has been gutted by fire.

SHOREHAM.—Four bungalows have been completely destroyed at Shoreham, one, the residence of Mrs. Dayer-Smith, being the largest in the district.

PATENTS.

*APPLICATIONS PUBLISHED.

185,255.—R. MacGregor: Concrete quay wall construction.

185,256.—W. Koot: Latch releasing devices.

185,317.—G. Jaeger: Concrete mixers.

185,326.—W. J. Calder: Window fasteners.

185,344.—P. C. Major and Smith, Major & Stevens, Ltd.: Door closing and check devices.

171,381.—Aktiebolaget Abjorn Anderson: Roofing tile press.

185,351.—M. J. Adams: Supports for sanitary and other like basins and appliances.

185,435.—E. C. R. Marks (Lava Crucible Co. of Pittsburgh): Production of ceramic articles.

185,460.—R. Greenwood and Carr & Co., Ltd.: Apparatus for baking and drying substances at high temperatures and for subsequently cooling same.

185,483.—T. B. Draper: Convertible furniture.

185,517.—A. Peters: Door bolt.

185,522.—E. W. Thiele: Presses for moulding articles to be fired in vertical ovens or kilns.

185,527.—G. W. Swift: Reinforced box blank material and method of manufacturing the same.

185,529.—Sabulite (Great Britain), Ltd., J. Bellingham, and W. H. McCandlish: Machines for moulding and pressing concrete and similar material into block form.

185,541.—A. Valente and M. Curzon: Combination or permutation locks.

185,595.—J. M. Walley: Castor for furniture and the like.

185,596.—F. Fowler and Coalbrookdale Co., Ltd.: Combined open fire-grates and cooking-stoves.

185,631.—H. Saberton and H. Saberton: Painters' and like blow lamps.

185,636.—E. Craddy and H. J. Packer & Co., Ltd.: Glueing out slabs.

185,664.—J. B. Jones and A. H. Jones: Construction of kilns for burning bricks, tiles, terra-cotta, and the like.

185,669.—C. D. Pochin: Manufacture of blocks or the like for paving and like purposes.

185,694.—B. R. Rowell: Joint for floor joists and like weight-supporting members.

185,764.—J. H. Hale: India-rubber tiles.

185,803.—F. Scott: Method of and apparatus for use in painting.

185,816.—L. Kirschbraun: Floor coverings and process of making same.

185,824.—E. Hodgkinson: Machines for making tiles.

185,834.—J. E. Minnitt (G. C. Minnitt): Louvre window or like shutters.

185,869.—J. W. Russell: Cabinets and cupboards.

185,895.—K. Berlepsch: Method for constructing stairs.

174,899.—E. G. Acheson: Methods of preparing graphitised vulcanised fibre.

185,918.—H. Wade (W. C. Griesser): Subaqueous structures.

185,936.—A Holmes: Window sashes.

185,937.—J. B. Smith and K. Smith: Means for locking or securing window sashes.

179,555.—Soc. Hera: Counter-balancing devices for sliding windows.

186,098.—M. N. Dessau and Rubber Roadways, Ltd.: Roadways.

186,101.—T. H. Steele, junr.: Desks.

186,104.—J. Michaels: Desks.

186,105.—J. A. Rowse: Manufacture of roofing and building material.

186,110.—Mouchel & Partners, Ltd., and J. S. E. De Vesian: Reinforcement of roads, platforms, foundations, &c.

186,115.—C. F. Whiffen: Reinforcements for concrete and like slabs, beams, posts, piles, sleepers, and slab walls.

186,116.—A. G. Green: Appliances for testing ladders, coupling sticks, &c.

186,156.—Imperial Trust for the Encouragement of Scientific and Industrial Research, and S. B. Schryver: Manufacture of coating-compositions.

* All these applications are now in the stage in which opposition to the grant of Patents upon them may be made.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	4 2 0
Second Hard Stocks	3 17 0

Per 1000, Delivered at London Goods Stations.

Flettons, at	£ s. d.		£ s. d.
King's Cross	2 15 0	Best Blue Pressed Staffs.	9 11 6
Do. grooved for plaster	2 17 0	Do. Bullnose	10 1 6
Do. Bullnose	3 10 0	Blue Wire Cuts	7 11 6
Best Stourbridge Fire bricks:—			
2½ in.	11 3 0	3 in.	13 2 0

GLAZED BRICKS—

Best White, Ivory, and Salt Glazed Stretchers	22 0 0	D'ble Str'tch'rs	30 10 0
		D'ble Headers	27 10 0
		One Side and two Ends	31 10 0
Headers	21 10 0	Two Sides and one End	32 10 0
Quoins, Bullnose and 4½in. Flats	28 10 0	Splays and Squints	30 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s. d.	
Thames Ballast	13 6	per yard, delivered 2 miles radius Paddington.
Pit Sand	16 0	" "
Thames Sand	16 6	" "
Best Washed Sand	16 6	" "
½ in. Shingle for Ferro-Concrete	14 0	" "
¼ in. "	15 0	" "
¾ in. Broken Brick	10 6	" "
Pan Breeze	5 6	" "

Per ton delivered in London area in full van loads.

Best Portland Cement. British Standard Specification Test £3 3 0 £3 8 6
86/- alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above	10 0
Roman Cement	8 15 0
Parian Cement	5 13 0
Keene's Cement, White	5 13 0
" Pink	5 8 0
Plaster, Coarse, Pink	3 0 0
" " White	3 12 6
" Fine	5 12 0
Sirapite, Coarse	3 12 0
" Finish	4 0 0
Grey Stone Lime	2 16 6
Chalk Lime	2 16 6
Best Ground Blue Lias Lime	2 18 6
Hair	17 0 0
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months, carr. pd.

Stourbridge Fireclay in s'eks 37s. 6d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 11
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	3 2
Do. do. delivered on road wagons at Nine Elms Depot	3 3
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 7
Do. do. delivered on road wagons at above stations, per ft. cube	4 8
White basebed, 3d. per ft. cube extra.	

NOTE.—½d. ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.

YORK STONE, BLUE—*Robin Hood Quality.*

	s. d.
Delivered at any Goods Station London.	
6 in. sawn two sides landings to sizes (under 36 ft. super.) Per Ft. Super	5 3
6 in. rubbed two sides, ditto "	5 9
3 in. sawn two sides slabs (random sizes) "	2 1½
2 in. to 2½ in. sawn one side slabs (random sizes) "	1 5½
1½ in. to 2 in. ditto, ditto "	1 3

HARD YORK—

Delivered at any Goods Station London.	
Scappled random blocks Per Ft. Cube	5 6
6 in. sawn two sides landing to sizes (under 40ft. super.) Per Ft. Super	5 4½
6 in. rubbed two sides ditto "	6 0½
4 in. sawn two sides slabs (random sizes) "	2 10
3 in. ditto, ditto "	2 5
2 in. self-faced random flags Per Yard Super	7 11

ARTIFICIAL STONE.

Delivered in London Area in full van loads.	s. d.
Plain 8 6 per ft. cube,	
Moulded 10 0 " "	
Cills 11 0 " "	

WOOD.

GOOD BUILDING DEAL.

Inches	per stan.	Inches.	per stan.
4 × 11	£34 0	3 × 6	£22 10
4 × 9	34 0	3 × 11	32 10
4 × 8	26 0	2 × 11	32 10
4 × 7	24 0	3 × 9	30 0
3 × 8	24 0	2½ × 9	28 0
3 × 7	22 10	3 × 4½	21 0
2½ × 7	22 10	3 × 4	21 0

PLANED BOARDS.

1 × 11	38 10	1 × 9	36 0

PLAIN EDGE FLOORING.

Inches	per sq.	Inches	per sq.
½	20/-	1½	32/6
¾	22/-	1¾	37/6
1	25/-		

WOOD (*Continued*).

TONGUED AND GROOVED FLOORING.

Inches	per sq.
1	25/-
1¼	32/6
1½	37/6

MATCHINGS (BEST).

Inches	per sq.
½	17/6
¾	22/-
1	25/-

BATTENS.

Inches	s. d.
¾ × 2	2 4 per 100 ft.

SAWN LATHS.

Per bundle	0 2 9

Dry Wainscot Oak, per ft. super, as inch	0	2	6	to	0 3 0
¼ in. do. do.	0	1	10½	to	0 2 6
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0	2	3	to	0 3 0
Cuba Mahogany	0	3	6	to	0 4 0
Teak (Rangoon, Moulmein or Java), per load	45	0	0	to	50 0 0
American Whitewood planks, per ft. cube	0	16	0	to	0 18 0
Best Scotch Glue, per cwt.	6	15	0	to	—
Liquid Glue, per cwt.	4	7	0	to	5 10 0

SLATES.

1st quality slates from Bangor or Portmadoc in truck loads delivered London area. Per 1,000 of 1,200.

	£ s. d.		£ s. d.
24 by 12	41 17 0	18 by 10	23 12 6
22 by 12	38 0 6	18 by 9	20 16 3
22 by 11	35 2 0	16 by 10	19 16 0
20 by 12	33 8 3	16 by 8	15 8 3
20 by 10	28 11 6		

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	6 0 0
Ditto hand-made ditto	6 10 0
Ornamental ditto	6 15 0
Hip and valley tiles (per dozen) Hand made	0 8 6
Hip and valley tiles (per dozen) Machine made	0 8 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—	£ s. d.
R. S. Joists, cut and fitted	13 0 0
Plain Compound Girders	15 0 0
" Stanchions	17 0 0
In Roof Work	20 0 0

WROUGHT IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £15 net value delivered direct from Works, 5 per cent. less above gross discounts, carriage forward if sent from London Stocks.)

Tubes. (all sizes).	Fittings. Up to 2".	Fittings. Over 2".	Flanges. Up to 2".	Flanges. Over 2"
Gas	55 %	50 %	55 %	60 %	65 %
Water	50 %	45 %	50 %	55 %	60 %
Steam	45 %	40 %	45 %	50 %	55 %
Galv'd—					
Gas	45 %	42½ %	47½ %	52½ %	57½ %
Water	37½ %	37½ %	42½ %	47½ %	52½ %
Steam	27½ %	32½ %	37½ %	42½ %	47½ %

L.C.C. COATED SOIL PIPES—London Prices ex works.

Pipe.	s. d.	Bends, stock angles.	s. d.	Branches, stock angles.	s. d.
2 in. per yd. in 6fts plain	3 2½	2 5		2 11	
2½ in. "	3 9½	2 8		3 8	
3 in. "	4 5½	2 11		4 4	
3½ in. "	4 10½	3 8		5 1	
4 in. "	5 5	4 1		5 10	

RAIN-WATER PIPES, &c.

Pipe.	s. d.	Bends, stock angles.	s. d.	Branches, stock angles.	s. d.
2 in. per yd. in 6fts. plain	1 10½	1 4½		1 10½	
2½ in. " "	2 1	1 7½		2 3	
3 in. " "	2 6	2 0		3 0	
3½ in. " "	2 11	2 4½		3 6	
4 in. " "	3 5	2 10½		4 3	

L.C.C. DRAIN PIPES.—9 ft. lengths. London Prices per yd.: 4 in., 5/3. .. 5 in., 6/9. .. 6 in., 8/-.

IRON—	Per ton in London. £ s. d.		£ s. d.
Common Bars	12 10 0	to	13 10 0
Staffordshire Crown Bars — good merchant quality	13 10 0	..	14 10 0
Staffordshire "Marked Bars"	16 0 0	..	17 0 0
Mild Steel Bars	12 0 0	..	13 0 0
Steel Bars, Ferro-Concrete quality, basis price	12 0 0	..	13 0 0
Hoop Iron, basis price	15 0 0	..	16 0 0
" " Galvanised	29 0 0	..	31 0 0
Soft Steel Sheets, Black— Ordinary sizes to 20 g.	14 0 0	..	15 0 0
" " " 24 g.	15 0 0	..	16 0 0
" " " 26 g.	16 10 0	..	18 10 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality— Ordinary sizes, 6ft. by 2ft. to 3ft. to 20 g.	20 0 0	..	21 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 22 g. and 24 g.	21 0 0	..	22 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 26 g.	23 0 0	..	25 0 0
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9ft. 20 g.	19 0 0	..	20 0 0
Ordinary sizes, 6ft. to 9ft. 22 g. and 24 g.	19 10 0	..	20 10 0
Ordinary sizes, 6ft. to 9ft. 26 g.	21 10 0	..	22 10 0

METALS (*Continued*).

	Per ton in London. £ s. d.		£ s. d.
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker	22 0 0	..	23 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	23 0 0	..	25 0 0
Best Soft Steel Sheets, 26 g.	24 10 0	..	25 10 0
Cut Nails, 3in. to 6in. (under 3in. usual trade extras.)	21 10 0	..	23 0 0

METAL WINDOWS—Standard sizes suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1/6 to 1/7 per foot super.

LEAD, &c.

LEAD—Sheet, English, 4 lb. and up	Delivered in London. £ s. d. 35 10 0	..	—
Pipe in coils	36 0 0	..	—
Soil Pipe	38 10 0	..	—
Compo pipe	39 40 0	..	—

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills per ton	23 10 0	..	—
Do., ex country, carriage forward per ton	24 10 0	..	—

COPPER—			
Strong Sheet per lb	0 2 3	..	—
Thin " "	0 2 4	..	—
Copper nails "	0 2 3	..	—
Copper wire "	0 2 4	..	—
TIN—English Ingots "	0 1 11	..	—
SOLDER—Plumbers' "	0 0 11	..	—
Tinmen's "	0 1 1	..	—
Blowpipe "	0 1 4	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz. fourths	2½d.	32 oz. fourths	8½d.
" thirds	4½d.	" thirds	10d.
21 " fourths	4½d.	Obscured Sheet, 15 oz.	3½d.
" thirds	6d.	21 "	5½d.
26 " fourths	5½d.	Fluted 15 oz. 7½d.	21 oz. 9½d.
" thirds	7½d.	Kn'tled 15 " 5½d.	21 " 7d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	4½d.
⅛ Rough rolled	5½d.
¼ Rough rolled	5½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6½d.
Ditto, tinted	6d.
Rolled Sheet	6d.
White Rolled Cathedral	5½d.
Tinted do.	7½d.

Cast Plate is same price as rough rolled.

PAINTS, &c.

	£ s. d.
Raw Linseed Oil in pipes per gallon	0 3 6
" " " in barrels "	0 3 8
" " " in drums "	0 3 11
Boiled " " in barrels "	0 4 0
" " in drums "	0 4 2
Turpentine in barrels "	0 9 0
" in drums (10 gall.) "	0 9 3
Genuine Ground English White Lead, per ton (in not less than 5 cwt. casks.)	56 0 0
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered	78 5 0
Red Lead, Dry (packages extra) .. per ton	39 0 0
Best Linseed Oil Putty per cwt.	0 16 0
Filocol per cwt.	0 15 6
Size. X D Quality fkn.	0 3 6

VARNISHES, &c.

	Per gallon. £ s. d.
Oak Varnish Outside	0 14 0
Fine ditto ditto	0 16 0
Fine Copal ditto	0 18 0
Pale Copal ditto	1 0 0
Pale Copal Carriage ditto	1 4 0
Best ditto ditto	1 12 0
Floor Varnish Inside	0 16 0
Fine Pale Paper ditto	0 18 0
Fine Copal Cabinet ditto	1 2 6
Fine Copal flatting ditto	1 0 0
Hard drying Oak ditto	0 18 0
Fine Hard drying Oak ditto	0 19 0
Fine Copal Varnish ditto	1 0 0
Pale ditto ditto	1 2 0
Best ditto ditto	1 12 0
Best Japan Gold Size	0 12 0
Best Black Japan	0 12 0
Oak and Mahogany Stain (water)	0 12 0
Brunswick Black	0 9 0
Berlin Black	0 14 0
Knotting (patent)	1 5 0
French and Brush Polish	0 17 6
Liquid Dryers in Terabine	0 10 0
Cuirass Black Enamel	0 7 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

CURRENT PRICES FOR BUILDING WORK IN LONDON.*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	15	0
Add if in clay	" "	1	6
Add for every additional depth of 6 ft.	" "	0	9
Planking and strutting to trenches	per foot super	0	7
Do. to sides of excavation, including shoring	" "	1	2

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6	per yard cube	40	0
Add if in underpinning in short lengths	" "	9	0
Add if in floors 6 in. thick	" "	3	9
Add if in beams	" "	4	6
Add if aggregate 1 : 2 : 4	" "	11	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	3	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	34	0	0
Add if in stocks	"	8	10	0
Add if in Staffordshire blues	"	24	0	0
Add if in Portland cement and sand	"	3	0	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1¼

POINTING.

		s.	d.
Neat flat struck or weathered joint	" "	0	0	3

ARCHES.

		s.	d.
Extra only to the price of ordinary brickwork :—			
Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	1	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	3
Setting ordinary register grates and stoves	each	1	1	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	5	5	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	7	6
Three-quarter-inch vertical damp course	" "	11	0
½ inch on flats in two thicknesses	" "	8	6
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	4

MASON.

		s.	d.
York stone templates fixed	per foot cube	16	3
York stone sills fixed	" "	28	6
Bath stone and all labour fixed	" "	12	0
Portland stone fixed	" "	21	6

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	79	9
Do. 20 in. × 10 in. Do. Do.	"	90	9
Do. 24 in. × 12 in. Do. Do.	"	99	0

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	5	6
Do. joists	" "	6	0
Do. roofs, floors and partitions	" "	6	6
Do. trusses	" "	8	6

		¾"	1"	1¼"	2"
Deal rough close boarding	per sq.	42/-	48/-	56/-	85/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	60	0
Do. to beams	per ft. sup.	1	6
Centres for arches	"	2	0
Gutter boards and bearers	"	1	1

FLOORING.

		¾"	1"	1¼"	1½"
Deal edges shot	per sq.		49/-	58/-	67/-
Do. tongued and grooved	"		54/-	65/-	72/-
Do. matchings	"	45/-	55/-		
Moulded skirting, including backings and grounds	per ft. sup.	1/8	2/1	2/3	2/9

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	" "	2	3
Add for fitting and fixing	" "	0	6
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights; average size	" "	4	0

DOORS.

		1½"	1¾"	2"
Two-panel square framed	per ft. sup.	2/4	2/7	2/9
Four-panel Do.	"	2/8	3/0	3/3
Two-panel moulded both sides	"	3/0	3/3	3/6
Four-panel Do. Do.	"	3/3	3/7	3/10

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	1/9	1/10	2/1
Deal shelves and bearers	"	1/6	1/8	1/11
Add if cross tongued	"	2d.	2d	2d.

STAIRCASES.

	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run.	0	9
Mahogany handrail; average 3 in. × 3 in.	" "	6	0
Add if ramped	" "	11	10
Add if wreathed	" "	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/4
Sash fasteners	11½d.	Mortice locks	5/3
Casement fasteners	1/5	Patent spring hinges and letting in to floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	17	0
Plain compound girders	"	20	0
Do. stanchions	"	23	0
In roof work	"	28	0

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/11	2/4½	3/7	4/-
Ogee Do. Do.	"	2/4½	3/1	3/10	4/9
Rain-water pipes with ears	"	2/9	3/7		
Extra for shoes and bends	each	4/4	5/11		
Do. stopped ends	"	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	"	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	54	0
Do. Do. in flats	"	50	0
Extra labour and solder in coated cesspools	each	7	4
Welt joint	per ft. run.	0	6
Soldered seam	" "	1	10
Copper nailing	" "	0	7

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	10d.	1/6	1/9	3/1	3/10	
Do. service	"	1/5	1/11	2/3	3/6		
Do. soil	"						6/2
Bends in lead pipe	each					3/3	8/2
Soldered stop ends	"	1/2	1/8	2/1	2/10	3/6	
Red lead joints	"	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints	"	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws	"				14/7	19/6	
Bib cocks and joints	"	6/4	9/7	15/4	41/-		
Stop cocks and joints	"	15/4	17/2	25/8	64/-		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	9
Do. Do. Sirapite	" "	3	11
Do. Do. Keen's	" "	4	0
Add sawn lathing	" "	1	7
Add metal lathing	" "	2	10
Portland cement screed	" "	2	1
Do. plain face	" "	3	9
Mouldings in plaster	per 1 girth	0	3
One-and-a-half granolithic pavings	per yard sup.	6	4

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	1	1
26 oz. Do.	" "	1	4
Obscured sheet	" "	1	8
⅛ in. rolled plate	" "	1	0
¼ in. rough rolled or cast plate	" "	1	1
¼ in. wired cast plate	" "	1	7

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	1	0
Knotting and priming	" "	0	8
Plain painting 1 coat	" "	0	11
Do. 2 coats	" "	1	7
Do. 3 coats	" "	2	4
Do. 4 coats	" "	3	0
Graining	" "	2	5
Varnishing twice	" "	1	11
Sizing	" "	0	4
Flatting	" "	0	8
Enamel	" "	1	3
Wax polishing	per foot sup.	0	9
French polishing	" "	1	3
Preparing for and hanging paper	per piece	2/- to 4/-	

* These prices apply to new buildings only. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 11 should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TRADE NEWS.

Messrs. A. Ransome & Co., Ltd., Newark-on-Trent, inform us that they have not discontinued making several types of wood-working machines, and that they are still making a full range of machines for all wood-working purposes.

Messrs. O. P. Drever & Son (Kettering), Ltd., have removed their London office at 7, Maddox-street, W., to more commodious premises at 141, New Bond-street, W.1, to which all enquiries and communications should be forwarded.

Hammersmith Borough has placed a contract with Messrs. William Shepherd & Sons, Ltd., Milkstone, Rochdale, for the resurfacing of about twenty roadways in the Hammersmith district. The surfacing material to be laid is "Asphaltic Slag for Roads."

We are informed by the Considère Construction Co., Ltd., that the name of the firm has been changed to "Considère Constructions, Ltd." This has been done with a view of avoiding any title which might give the idea that the Company was engaged in contracting work, its business being entirely confined to the detail calculations and design of reinforced concrete.

We have received a copy of the second issue of "Shepherd's N.E.W.S." A copy will be sent to highway surveyors, consulting engineers, architects, contractors, and others interested, on application being made to the Editor, "Shepherd's N.E.W.S.," 17, Surrey-street, Strand, London, W.C.2.

Messrs. Higgs & Hill, Ltd., Crown Works, South Lambeth-road, S.W.8, send us a copy of their publication, "The Crown Journal."

Boyle's latest patent "Air-Pump" ventilators have been supplied to the Royal National Lifeboat Institution, Poplar, London, by Messrs. Robert Boyle & Son, ventilating engineers, Holborn Viaduct, London.

Messrs. George Wright (London), Ltd., iron founders, heating and warm-air ventilating engineers, 19, Newman-street, Oxford-street, London, W.1, send catalogues of their various productions.

Messrs. John Jardine, Ltd., Doering-street, Nottingham, send us a pamphlet illustrating and describing their new stalk hangers.

Messrs. James Keith & Blackman Co., Ltd., engineers and manufacturers, 27, Farringdon-avenue, London, E.C.4, have sent us a pamphlet giving particulars of the "O.C." and "E" independent coke-fired domestic service boilers.

Resignation.

Mr. H. W. Powy, the Surveyor to the Llandilo R.D.C., has resigned his appointment as Surveyor to the Carmarthen Borough Council.

Presentation.

Mr. A. S. U. Taylor, A.M.I.C.E., the retiring surveyor to the Bedwas and Machen U.D.C., was recently the guest at a dinner given at the "Clive Arms" Hotel, Caerphilly, to celebrate the completion of the Bedwas housing scheme. On behalf of the Council a gold watch was presented to Mr. Taylor. Councillor David Jones, J.P., presided, and the host was Mr. T. Howells, builder, Caerphilly.

Engineers' Pocket Book.

We have received from Messrs. Oxford Technical Publications (1 and 2, Bedford-street, W.C.2) copies of "The Practical Engineer Mechanical Pocket Book and Diary" and "The Practical Engineer Electrical Pocket Book and Diary" for 1923 (price 2s. 6d. net each). These well-known publications, each containing over 600 pages full of information of everyday use to mechanical and electrical engineers, have been thoroughly revised and brought up to date, and additional matter has been embodied in each. The books measure 5½ in. by 3½ in., and the thin paper on which they are printed enables the thickness to be kept down to 1 in., so that they are not too bulky to carry about.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him *not later than Tuesday evening.*

* Denotes *accepted.* † Denotes *provisionally accepted.*

‡ Denotes *recommended for acceptance.*

§ Denotes *accepted subject to modifications.*

BIRKENHEAD.—Erection of mess rooms and lavatories at the Gasworks, for the T.C. :—
*Joseph Davies, Birkenhead £618

BIRKENHEAD.—For making up Daffodil-, Speedwell- and Foxglove-roads, for the T.C. :—
*Charles L. Warren, Wallasey—
Daffodil-road £861 18 10
Speedwell-road 1,028 10 8
Foxglove-road 205 9 8

BRADFORD.—For painting work at St. James' Markets, abattoirs and cold-air stores, for the T.C. :—
*G. Ellis £1,709

BRADFORD.—For repairs at St. James' Markets, abattoirs, &c., for the T.C. :—
*J. H. Pitchers & Son—
Joiners' repairs £504 14 2
*L. D. Sunderland—
Plumbers' repairs 220 0 0

BURNLEY.—For erection of tramway office at Nelson centre, for the T.C. :—
*J. & J. H. Boothman £748

CANNOCK.—Erection of 22 bungalows at Chadsmoor, for the U.D.C. :—
*B. F. Felton & Son, Croxton, £310 per bungalow.

COLWYN BAY.—For erection of new nursing block (47 beds) and additions and alterations to existing hospital in Hesketh-road, for the Building Committee of Colwyn Bay and West Denbighshire Hospital. Mr. S. Colwyn Foulkes, architect, Central Chambers, Colwyn Bay :—

R. & P. Williams, Colwyn Bay	£42,533
John Jones, Conway	34,945
Evan Hughes, Llandudno	33,715
Saunders & Sons, Cirencester	33,000
Owen Hughes, Deganwy	33,000
William Evans, Old Colwyn	32,000
R. L. Roberts, Llandudno	31,900
Wilks, Son & Peake, Hereford	31,622
William Drew, Ltd., Stroud	31,750
Bowers & Co., Hereford	31,200
Joseph Cooke, Stoke-on-Trent	31,000
C.W.S. Building Dept., Manchester	30,934
Frank Butterworth, Manchester	30,700
Walker & Slater, Derby	30,603
Fearnley & Sons, Manchester	30,100
Huxley & Co., Chester	29,990
Treasure & Sons, Shrewsbury	29,935
Tomkinson & Sons, Liverpool	29,793
John Laing & Sons, Liverpool	29,741
Arthur Thorpe, Llandudno	29,700
Wilson Lovatt & Sons, Wolverhampton	29,697
Walter Beeden, Rotherham	29,621
Simms, Son & Cooke, Nottingham	29,500
Davey & Co., Runcorn	29,500
George Salt, Deganwy	29,470
Wm. Sapcote & Sons, Birmingham	29,449
John Barnsley & Sons, Birmingham	29,226
Joseph Dolan, Warrington	29,126
Gerrard & Sons, Manchester	29,000
Wm. Townson & Sons, Bolton	28,877
Walter Spencer, Liverpool	28,848
Rd. Costain & Sons, Blundellsands	28,800
*Joseph Davies, Birkenhead	28,498
J. W. Kent, Bursiem	25,950

DERBY.—For the erection of 20 houses, for the T.C. :—
*Gee & Sons £7,130

GLASGOW.—For electric lighting installation at Sandyhills housing scheme, for the T.C. :—
*D. Henderson £1,169 13 11

GLASGOW.—For supply of 120 tons of 24 in. cast-iron pipes, to the Water Department :—
*Macfarlane, Strang & Co. £1,104 7

GLASGOW.—For the erection of the Bearsden sub-station, for the Tramways Department of the T.C. :—
Excavator, concrete, brick, and mason—
*George Stewart £5,472 18 7
Carpenter, joiner, glazier, and ironmonger—
*G. Newton & Sons 836 9 0
Steel work—
*Fleming Bros. 212 7 0
Plumber—
*J. Paterson & Co. (Plumbers), Ltd. 328 12 3
Slater—
*W. Miller & Co. 193 9 1

GLASGOW.—For erection of reinforced concrete bridge at Cumbernauld-road, for the T.C. :—
*Melville, Dundas & Whitson, Glasgow £4,655

HAVERFORDWEST.—For paving work at Bocherow, for the Perrott Trust :—
*W. Fortune, Haverfordwest £110 10

HULL.—Supply of 300 standard Bordeaux fir to the T.C. :—
*Tweddell & Graham, per standard £16 5

HULL.—For erection of houses on Hessle-road site, for the T.C. :—
†T. H. Wilburn, Ltd., Scunthorpe— per block
11 blocks of 6 non-parlour type.. £1,838 6
2 blocks of 2 parlour type 651 0
2 blocks of 2 non-parlour type.. 550 2
(All including electric light installations).

HULL.—For erection of houses on Cottingham-road site, for the T.C. :—
†Stubbings & Fell, Ltd., Sutton-in-Ashfield— per block
8 blocks of 6 non-parlour type £2,040
1 block of 2 non-parlour type 630

HULL.—For building of automatic telephone exchange, Holderness-road, for the T.C. :—
*J. Houlton & Son £725

HULL.—For erecting cooling towers at Electricity Works, for the T.C. :—

	Amount of Tender. £	Completion of Four Towers. Weeks.
Worthington-Simpson, Ltd.	33,212	60(b)
W. H. Roy & Co.	12,940	42
Peter Brotherhood, Ltd.	10,800	28
Film Cooling Towers, Ltd.	10,100	32
Premier Cooler & Engineering Co., Ltd.	9,490	20
*Davenport Engineering Co.	8,698	19
Chas. Bradshaw & Co., Ltd.	8,400	34(a)

(a) If creosoted in conformity with remainder of tenders, add £450. (b) Steel towers.

LONDON.—For painting and cleaning works, &c. at the Hospital, East Dulwich-grove, for the Guardians of the Southwark Union. Messrs. A. Saxon Snell & Phillips, architects, 9, Bentinck-street, Manchester-square, W.1 :—

W. J. Underwood, Penge	£1,015 0 0
Buchan & Son, South Woodford	802 12 9
Perry & Co., London	684 0 0
Young & Son, Regent's Park	668 2 8
Wm. Stamper, Marylebone	665 10 0
Arding & Hobbs, Clapham	662 0 0
Mowlem & Co., Ltd., London	646 10 0
Montrose & Co., Bromley	633 0 0
Harling & Son, Brockley	629 6 6
Mitchell & Son, Dulwich	589 0 0
A. Phelps & Wilton, Streatham	588 0 0
R. Woolaston & Co., Limehouse	552 18 0
Mayfair Window Cleaning, &c., Co., London	529 0 0
R. W. Bowman, Stepney	524 14 0
Geo Hill & Son, Streatham	524 0 0
S. Shaw, Barnsbury	496 0 0
W. Chappell, Maida Vale	488 7 2
A. H. Inns, Bishopsgate	445 0 0
M. Greenwood & Sons, Harlesden	442 9 3
Myall Bros., Ilford	399 14 2
*H. A. Thomas & Son, Dulwich	344 2 0
W. Bickerton, Stratford	342 10 0

NORTHAMPTON.—For erection of houses in connection with non-assisted scheme, for the County Borough. Mr. Alfred Fidler, Borough Engineer and Surveyor, Northampton :—

—	Abington Estate. Tender A. 4 B3 shops, 4 B3 houses.	Harlestone-road Estate. Tender B. 2 B3 shops.	Far Cotton Estate. Tender C. 20 A2, 2 A3 and 2 B3 houses.	Tender D. 6 A3 and 10 B3 houses	Tender E. 10 A3 houses	Tender F. 8 A3 and 8 B3 houses.	Tender G. 4 A2 houses.
H. G. Allum	—	£918 6 0	—	—	—	—	£1,320
W. E. Cockerill	£4,050 0 0	—	—	—	—	—	—
A. L. & H. W. Chown	4,276 0 0	1,164 0 0	£8,530	£6,910	£3,820	£5,746	1,440
E. Green & Sons	3,641 0 0	914 0 0	8,196	6,183	3,539	6,066	1,350
A. Glenn & Sons	3,640 0 0	—	—	—	—	—	—
‡D. F. Gibson	—	786 0 0	—	—	—	—	—
‡H. Holton	‡3,382 0 0	858 0 0	—	—	3,554	—	—
A. R. Hawtin & Sons	3,644 0 0	986 0 0	8,198	6,400	3,600	6,248	1,320
G. B. Heap	4,240 0 0	—	—	—	—	—	—
T. Higgs	—	917 0 0	—	—	—	—	—
W. Higgins, Ltd.	3,808 0 0	970 0 0	8,968	6,880	4,120	6,812	1,468
F. Jordan	4,484 5 8	1,121 4 4	—	—	—	—	—
‡H. Martin, Ltd.	—	—	7,680	6,080	3,390	5,950	1,235
North'ptn. Co-op. Soc.	—	—	—	—	4,400	—	—
G. F. Sharman	—	—	7,958	6,335	3,623	6,233	1,322
W. H. Samwell	—	—	8,120	—	—	—	—
T. Wilson	—	1,100 0 0	—	—	3,730	—	1,466
S. Walker	3,440 0 0	—	—	—	—	—	—

MAIDENHEAD.—For erection of a bungalow on the Bath-road. Mr. H. E. M. Hobbs, architect and surveyor, 54-56, High-street, Maidenhead :—

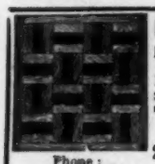
Cox & Sons	£1,517
J. K. Cooper & Sons, Ltd.	1,406
*W. A. James & Archer	1,296

MARGATE.—For alterations and additions to Westbrook lavatories, for the T.C. The Borough Engineer and Surveyor, 13, Grosvenor-place, Margate :—

E. Padget & Sons, Margate	£3,338 0
Ross & Co., Westgate-on-Sea	2,936 10
Rice & Son, Margate	2,549 0
Stagg Bros., Margate	2,400 0
E. W. Martin, Ramsgate	2,200 0
*J. Parkinson & Sons (Blackpool), Ltd., Westgate-on-Sea	2,200 0

NEWTONMORE.—For erection of building at the Hotel, for Mr. George Main. Mr. Alexander Cattanach, architect, Kingussie :—

Mason—	
Wilson Bros., Glasgow	£975 0 0
Joiner—	
D. Frazer, Kingussie	783 0 0
Plumber—	
A. Cattanach & Son, Kingussie	209 10 0
Slater—	
W. Taylor & Son, Inverness	88 0 6
Plasterer—	
L. Macpherson, Kingussie	218 0 0
Painter—	
W. Dunbar & Son, Kingussie	54 10 8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OXFORD.—For erection of the first 14 houses on the Weirs-lane site, for the T.C. :—

Hunt & Sons, High Wycombe	£8,883
Billings & Co., Oxford	8,290
Hinkins & Frewin, Oxford	8,232
A. Cox & Sons, Ltd., Abingdon	8,225
E. Organ & Son, Oxford	8,050
Saunders & Sons, Ltd., Cirencester	7,700
T. H. Kingerlee & Sons, Oxford	6,741
*A. L. & H. W. Chown, Northampton	6,610

ROCHDALE.—For erection of bowl store and shelter at Falinge Park, for the T.C. The Borough Surveyor, Town Hall, Rochdale :—

*Butterworth & Diggle, Rochdale.

SOUTH NORWOOD.—For additions to 212, South Norwood Hill, South Norwood, for the owner. Mr. F. W. Rees, M.S.A., M.C.I., architect, 44, Park-lane, Croydon :—

*F. C. Langford, Upper Norwood £97 17 6

SOUTHWELL.—For supplying and laying about 14 miles of water-mains, erection of pumping station, reservoir, &c., for the parishes of Oxton, Epplestone, &c., for the R.D.C. Messrs. Sands & Walker, Milton-chambers, Milton-street, Nottingham :—

Somerville & Co., London	£23,821 0 0
Muirhead, McDonald, Wilson & Co., Birmingham	17,671 7 4
T. Bow, Nottingham	16,162 0 0
Trentham, Ltd., Hinckley	15,270 3 9
Walker & Slater, Derby	14,965 0 0
Ward & Tetley, Bradford	14,858 19 0
Eastwood & Sons, Worksop	14,360 0 0
Nadin & Son, Sheffield	14,229 15 8
Lane Bros., Mansfield	14,061 18 6
Taylor & Son, Basford	13,034 14 3
Stow & Co., Newport	12,374 15 5
Pullar & Co., Manchester	12,304 12 6
Hodson's, Ltd., Nottingham	12,120 0 0
Langley & Son, Kirton, Lincs.	11,974 10 0
Netherfield Contracting Co., Netherfield	11,915 0 0
Hy. Middleton, Newnham	11,694 14 9
H. Ashley, Mansfield	11,655 8 4
Collins & Co., Radcliffe	11,500 0 0
Wilson & Co., Newcastle	11,274 17 5
Somerfield & Son, Nottingham	11,270 17 8
Price & Co., Nottingham	11,171 9 2
Lane, Ltd., Cambridge	10,994 15 0
Squires & Son, Selby	10,982 2 7
Bugbird & Son, London	10,805 15 0
F. G. Skerritt, Nottingham	10,555 0 0
*C. S. Tomlinson, S. Normanton	10,475 10 9

WATERLOO-WITH-SEAFORTH.—For making-up part of Seaforth-road, for the U.D.C. Mr. J. R. Fothergill, Surveyor and Engineer, Town Hall, Waterloo :—

H. C. Pullar & Co., Manchester	£2,557 12 0
Rd. Costain & Sons, Blundellsands	1,731 1 9
W. H. Worthington, Ltd., Manchester	1,664 10 0
Peter Balmer & Sons, Aintree	1,646 19 0
*W. F. Chadwick, Ltd., Liverpool	1,617 4 6

WREXHAM.—Construction of sewage disposal works at Brymbo and Broughton, for the R.D.C. :—

*R. Williams, Brymbo £4,014 14 8

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TIPTON.—For construction of four hard tennis-courts at the Victoria Park, for the U.D.C. Mr. W. J. Jukes, Public Offices, Tipton :—

Asphalte & Cement Co., Birmingham	£1,560 0 8
Hodson's, Ltd., Nottingham	1 125 6 10
Wm. Roe & Co., Wolverhampton	1,086 16 8
E. E. Jeavons & Co., Dudley Port	1,055 7 4
Martin & Element, Ltd., Smethwick	1,018 7 0
J. Hunt & Sons, Smethwick	926 17 4
*W. Element & Sons, Tipton	841 11 5
En-Tout-Cas Co., Leicester (for surfacing material only) per court	70 0 0
Surveyor's Estimate	955 0 0

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